OCTOBER, 1942

fueloil & oil heat

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FULL DETAIL OF FUELOIL RATIONING, PAGES 15 TO 21

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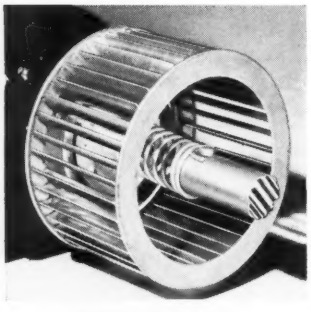
THE HEAT'S ON FOR VICTORY!



FLEX-FUSE DRIVE
means longer life, for it reduces the strain on the motor when the burner starts, and serves as a fuse if the motor becomes overloaded.

TIME SAVER TOP
simplifies service and saves time and labor by making all working parts easily accessible.

TODAY, when America's Industrial Might answers the call for increased speed, efficiency and economy of operation, the many advantages of Silent Glow Oil Burners become doubly important.

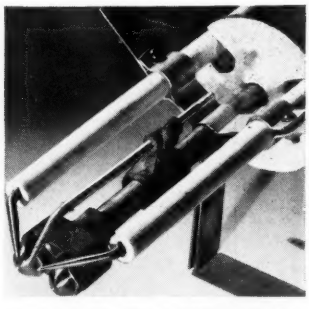
In factories all over the country . . . wherever heat is required . . . production time and production costs are being cut to a minimum by the use of Silent Glow installations. And in our military camps . . . both here and abroad . . . and on our ships at sea, Silent Glow is serving with equal honor and efficiency.

Silent Glow's Model 8800 is another piece of precision machinery which is helping to make Victory a reality. This gun-type unit burns up to thirty gallons of ordinary #3 fuel oil per hour.

Silent Glow 6800's, and the big 8800 burners, are still available to anyone who can qualify, according to government regulations, as being eligible for replacement or original installation.

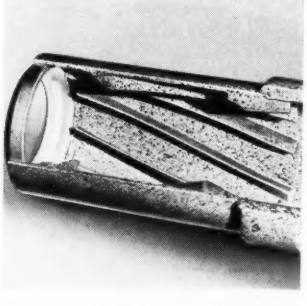
SILENT GLOW
OIL BURNER

FOR HEATING, COOKING, PROCESSING



CHROME STEEL IGNITION RODS,
properly forged, finely ground and accurately set, assure positive and immediate starting.

PROGRESSIVE ROTATION
allows the boiler greater opportunity to absorb more heat from the flame, leaving less heat to go up the chimney.



THE SILENT GLOW OIL BURNER CORPORATION, HARTFORD, CONNECTICUT

EXCELLENCE

We pledge every resource and every effort to the continued maintenance of our high standard of excellence in all our products.

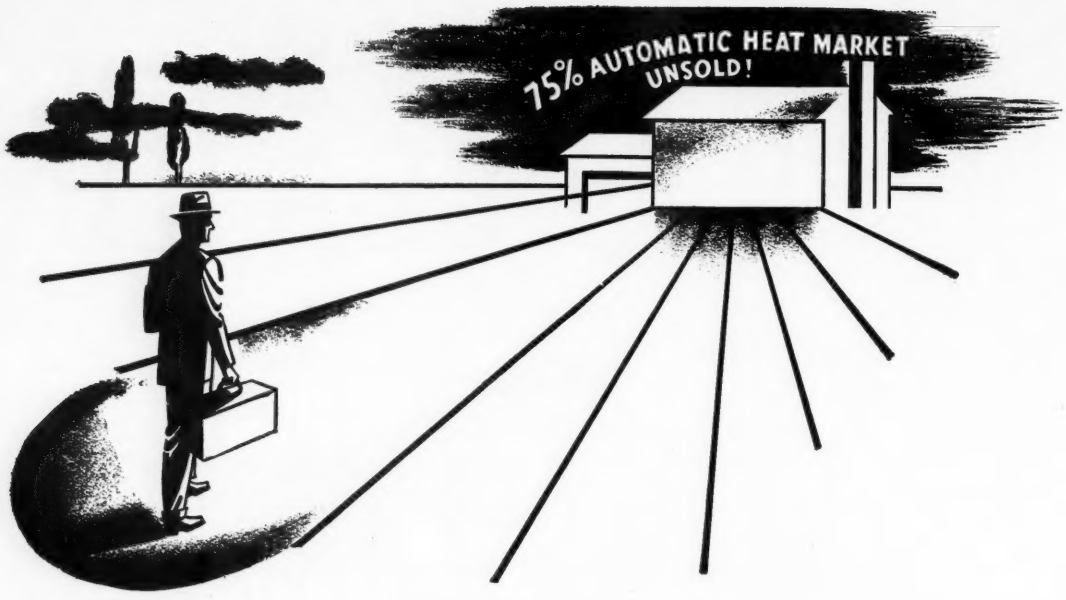
On Thursday, September 17, 1942, the Army-Navy Production Award was conferred upon the Sundstrand Machine Tool Co. for a high standard of excellence and production volume in the manufacture of machine tools and hydraulic equipment. The Army-Navy "E" flag flying above the plant and the lapel pin worn by every member of the organization are visible symbols of the award. The spirit of cooperation between employees, years of engineering experience and skilled workmanship combined in Sundstrand products, are represented by the high standard of performance of every unit doing its share on production lines of the United Nations. We are proud to have been chosen for this honor.

Sundstrand Pump Division

2538 Eleventh Street, Rockford, Illinois, U. S. A.

SUNDSTRAND MACHINE TOOL CO. S ROCKFORD, ILLINOIS, U.S.A.

fueloil & oil heat



WORTH WORKING FOR

Dealers who have adopted the program of the Oil Burner Institute are

1. Increasing income by doing more intensive servicing and extending service operations to *all* types of heating plants,
2. Saving fuel oil and increasing customer good will by replacement of worn burner parts.

By following this program, you can assist in the all-out war effort and at the same time lay important ground work in developing the huge market for automatic oil heat that is still untouched. It is estimated that only 25% of all central heating systems in use at present are equipped with automatic heat. The remaining 75% certainly affords a market that's well worth working for!

Published in the interests of the oil-heating industry.

THE TORRINGTON MANUFACTURING COMPANY
TORRINGTON, CONNECTICUT
Manufacturers of AIRotor Blower Wheels and AIRistocrat Quiet Propeller Fan Blades

VOL. I NO. 6

fueloil & oil heat

OCTOBER 1942

Names in the news

V. K. Smith, of Ohio Electric Company, suffered a concussion of the brain and several broken ribs in the wreck of a Baltimore & Ohio passenger train at Dickerson, Md., September 24. He was taken to the Frederick City Hospital, Frederick, Md. He is reported to be recovering satisfactorily.

Lt. Allen Geisler, a partner in the White Star Oil Co., Brooklyn, was killed in an airplane accident at Mitchell Field early in September.

Robert J. Hull, former division sales manager at New York for Cities Service Oil Company, has resigned to become representative of OPC in New England.

W. Walter Timmis has resigned as chief of the WPB Plumbing and Heating Branch. Ronald Allwork, recently appointed Deputy Chief, is acting chief.

Frank Spencer, Spencer Petroleum Co., Chicago, recently was elected president of the Northwestern Alumni Association, an organization of 50,000 graduates of Northwestern University.

Charles E. Wilson, president of General Electric Company, has been named Vice-Chairman of the War Production Board and chairman of the newly organized Production Executive Committee. Since Chairman of the Board Philip D. Reed of General Electric also is in government service, Honorary Chairman Owen D. Young and Honorary President Gerard Swope have resumed their original responsibilities with the company.

M. W. Crew of Hotstream Heater Company, as a member of the Technical Advisory Committee on Temperature and Combustion Control for WPB, recently submitted a resume of suggestions for reducing fuel consumption. The report, in two parts, covered residential heating and commercial heating.

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Editorial leaks

A STATEMENT OF POLICY

Believing firmly in the oilheating industry as a potent force toward the economic production, transportation and utilization of necessary fuel, the protection and betterment of health, the emancipation of families from home drudgery, and a chief contributor to the rising standard of living so necessary to continued human progress; FUELOIL & OIL HEAT now pledges itself:

1. To foster every move possible to the oilheating industry that will contribute to the coming Victory, and hasten its arrival.

2. To protect the industry's customers in every way consistent with the war effort, and to defend their rights against discriminiation from any source whatever.

3. To inform and instruct the industry on matters vital to its welfare, to the end that it may survive the present world emergency in a form and with the virility necessary to continue its contributions to the welfare of humanity.

4. To collect and disseminate such data and experience as may further the speedy accomplishment of all these aims.

If the brand new fueloil rationing plan looks somewhat peculiar to you, remember that it had so many fathers that Mama OPA herself doesn't know who the youngster looks like. It has many features that are familiar. Some say it looks like FHA, others swear that they can see OBI in it. Hints have reached us that it looks a little like FUELOIL & OIL HEAT, and others say it is the spitting image of Harold Ickes, particularly around the Last-Year's-Consumption. But its overall appearance is hard to name.

While attending physicians are editing their reports for the journals, the neighbors are beginning to whisper in an unkind way. They are becoming convinced there is something wierd about the whole business. The finger-count proves that Mama OPA was long overdue. The youngster should have arrived last spring when the various daddies were saying he should.

But the one thing that worries the neighbors most is how big and tough the youngster looks. There is a general feeling that he soon will make life miserable for half the country, and kick the health out of all the other kids. It is common neighborhood gossip that it's time Mama OPA taught the brat some manners before he becomes a menace to society.

◈

Customers are reported to be asking their oil suppliers how much floor area will give them the oil they would like next winter. This, of course, may be idle curiosity on the part of homeowners.

Dealers may be doing their customers a considerable service to point out that rationing officials have planned a year's vacation at government expense for anyone who is willfully over-optimistic. There is an alternative in the form of a $10,000 fine, or if the optimism is too great, both the vacation and the fine may be imposed.

◈

The sympathy of dyed-in-the-wool coal men over the plight of transportation-tied oilheating is touching. Just like the sympathy of an ex-prima donna when the new star who displaced her misses opening night because her plane is grounded.

In warning coal dealers not to muff a priceless opportunity to recapture a lost love, bigwigs of the industry have showered them with advice, not unmixed with a wistful note of "Maybe."

Random pickings from "Advice to the Lovelorn" columns of coal publications of the past month are these heart-throbs, all captioned by the industry's brass hats: "Our main object is to try to get oil users back to coal, and remain on coal" . . . "Dealers should realize that in many cases conversions will be made with ill grace on the part of the consumer" (a rank understatement) . . . "If he simply puts in grates for the duration, he is going to do so with the firm intention of putting the oilburner back the very minute he can get oil" . . . "Let no one think for a moment that every oil user who changes to coal does so because he loves coal and has become sick of the smell and smudge from oil" . . . "Naturally after having had an oilburner he will not relish the task of having to go down stairs and handfire his furnace and endure all the other discomforts that an inexperienced hand fireman will create" (Naturally).

Wheels of progress often run over somebody's toes; that's the sad part of any change from obsolescence to improvement. When coal displaced buffalo chips progress was served (a little), but the chip gatherers tried for years to convince people that their product was more volatile, easier to lift. Indians sometimes sacked the coal wagons, then the chip business enjoyed a revival, but it was short-lived.

Coal men are baffled at the oilheating users' unwillingness to convert, seem to feel that the seriousness of the situation hasn't been stressed enough. Probably they know the answer. Emancipation is a priceless possession, not lightly discarded. Reluctance to return to slavery is understandable, even though failure to return means temporary inconvenience.

◈

Manufacturers of the oilheating industry are doing an outstanding job of war production, as shown by the list of those who have won the Army-Navy Production Award in this issue. This list covers only those who have been producing for war over a period of time. Others of our manufacturers only now are getting into stride, and the list is sure to be much longer within the next few months.

Few realize the enormous problems of converting an entire plant to make quality munitions in quantity. It causes dislocations of men, products and machines.

Silent Glow, for instance, now has an order for Army oilburners and no place to make them. They have had to farm out oilburner parts to subcontractors.

Something of the spirit in our plants is proclaimed by the signs in Oil-O-Matic's factory; "The difficult we do immediately. The impossible takes a little longer."

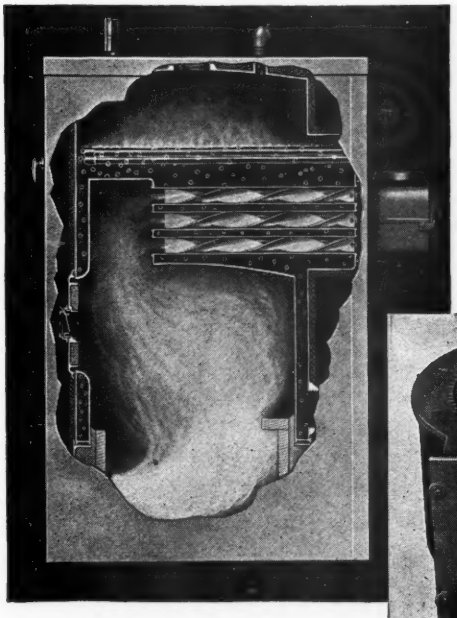
Conversion grates must be good!

You're asking a lot of a "conversion grate." At its best you can hardly expect it to create the same satisfaction as a good oil burner, simply because it is not automatic. But at least you can assure all the satisfaction of hand-fired coal — *if you use good grates . . .*

We know all about grates, having made them since 1886. And we know that in a Fitzgibbons oil-burning boiler the heavy "conversion grates" we supply will fit the boiler. We know too that they will not crack, break, burn out, nor cause headaches for their installer and bitter complaints from their users.

Let Fitzgibbons experience keep you out of trouble on conversion jobs. Use Fitzgibbons grates, and accessories in Fitzgibbons steel boilers.

FITZGIBBONS
OIL BURNING BOILERS

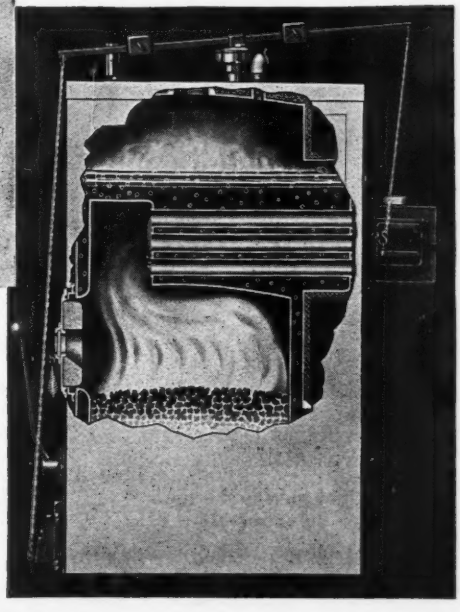


plus

FITZGIBBONS GRATE ASSEMBLY

equals

COMPLETE CONVERSION



We have prepared a bulletin describing the procedure and required equipment for converting to coal burning any Fitzgibbons 400 Series boiler, Oil Eighty Automatic, or R-Z-U Junior boiler. Fill in and mail the coupon below, and we will send you a copy. In special cases, bring the problems to us. And in the maintenance of Fitzgibbons Steel Boilers, depend upon our Service Department for quick shipment of replacement parts, and willing cooperation.

MOST ECONOMICAL IN FUEL · 1886 · THE FITZGIBBONS BOILER

BUY U. S. WAR BONDS

FOH-10

Fitzgibbons Boiler Company, Inc.

101 PARK AVE., NEW YORK, N. Y.

Send me the bulletin showing how to convert Fitzgibbons Steel Boilers to hand firing.

Name.....

Address..... State.....

fueloil & oil heat

LIFE
THE SATURDAY EVENING POST
The AMERICAN HOME
Better Homes & Gardens
THESE MAGAZINES ARE TELLING THE DUST-STOP* STORY TO MILLIONS.
AND THAT MEANS BUSINESS HEADIN' RIGHT MY WAY.

5-month nation-wide advertising campaign TO BOOST YOUR DUST-STOP SALES

ATTRACTIVE, big-space Dust-Stop advertising in 4 leading magazines—a total of 57,319,145 ads—that's the way Dust-Stop is backing up its dealers.

Right now is the time to cooperate

This powerful advertising is just now getting under way. It is being read by hundreds of householders in your locality. You know that heating problems are more talked about this year than ever before . . . that puts Dust-Stops right in line for consideration. So why not get aboard?

Send for these FREE Dust-Stop Dealer Helps

1. **Attention-getting newspaper advertisements**—all ready to be turned over to your local newspapers.

2. **Attractive mailing pieces**—a strong-pulling direct-mail campaign to send customers to your store.

3. **Reminder postcards**—follow-ups for the mailing pieces. Imprinted with your name, address and telephone number.

4. **Radio spot announcements**—all ready to go on the air to boost your name and business.

5. **Window and counter displays**—big colorful eye-catchers that immediately tie-in your store with all the other Dust-Stop advertising.

6. **Furnace labels**—keep your name and address constantly in front of householders.

You get Plus-advantages, too

When you tie in with Dust-Stop advertising, besides getting Dust-Stop replacement business, *you'll be the one they think of for furnace service and repair work.* So, call your distributor now about Dust-Stop's NEW SALES PLAN—"Pulling Profits out of the Air." *Owens-Corning Fiberglas Corporation, Toledo, Ohio. In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.*

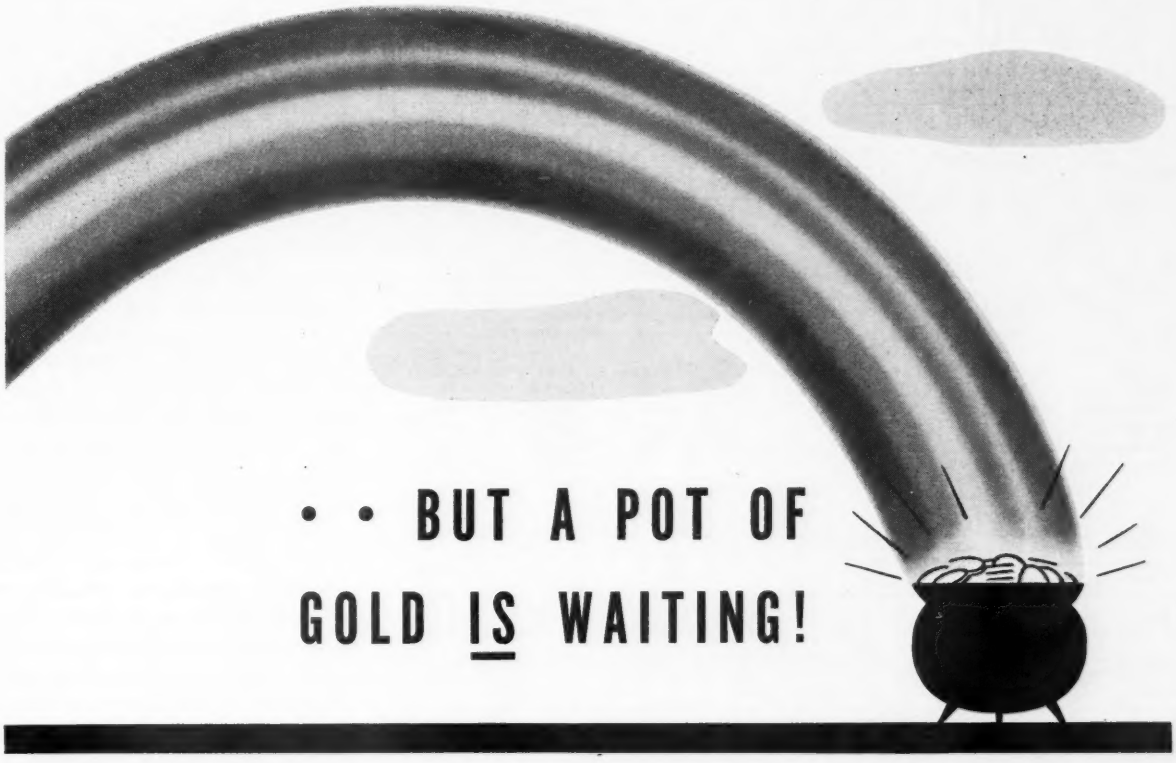
FIBERGLAS*

DUSTOP*

*T. M. Reg. U. S. Pat. Off.

AIR FILTERS

This is No Rainbow



● War's grim necessity . . . the drastic restriction of all normal business activity . . . has nothing appealing in it. We wouldn't be Americans if we even pretended to like it.

But, just as emphatically, we wouldn't be Americans if we didn't know how to "take it" for the duration. By now it's pretty clear that there's one main job: *to thrash the upstarts who would throttle our enterprise permanently!*

In the heating industry, as in many others, the job today is *Service* . . . saving what we have . . . making it last. It's a job that tests our skill and our resourcefulness. And it's thoroughly worth-while. For, when the lights go on again all over the world . . . when the rainbow does come out . . . there'll be more than a mythical pot of gold for those who have ridden out the storm.

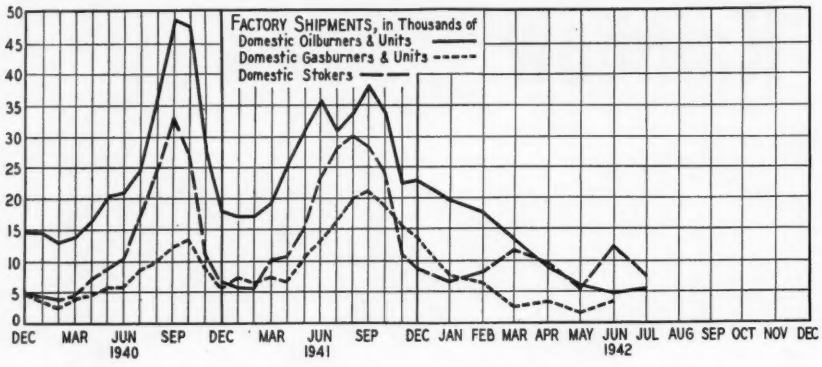
Dealers and service people in business then will face a pent-up demand, a market that dwarfs all previous experience. To make sure you're on hand when this occurs *do that service job now* in the best way you know!

And remember . . . Penn is prepared to furnish, under existing priority rules, new controls to replace those which cannot be made to function efficiently. *Penn Electric Switch Co., Goshen, Indiana.*

PENN CONTROLS

REFRIGERATION, AIR CONDITIONING, ENGINE, HEATING, PUMPING AND AIR COMPRESSOR

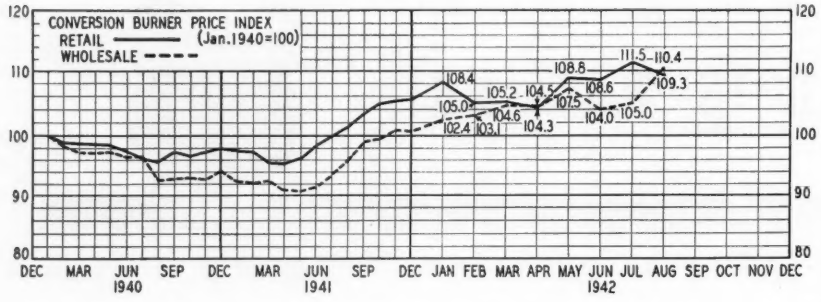
fueloil & oil heat



Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 148 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	JULY			SEVEN MONTHS		
	1942	1941	Percent Change	1942	1941	Percent Change
Conversion	2,771	23,184	—88.4	54,943	138,664	—60.5
Boiler units	876	3,273	—73.4	7,161	17,973	—60.3
Furnace units	1,714	4,655	—63.2	13,234	22,478	—41.1
All domestic	5,361	31,112	—83.0	75,338	179,115	—58.0
Commercial	5,140	2,702	+90.3	33,843	19,137	+77.0
Total	10,501	33,814	—68.9	109,181	198,252	—44.8



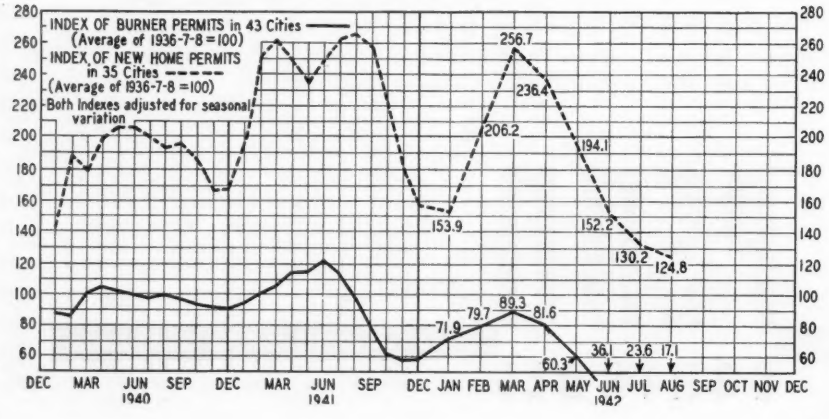
Price Index: Conversion Burners: Jan. 1940 is 100%

	WHOLESALE				RETAIL			
August	110.4	Six months ago	103.1	August	109.3	Six months ago	105.0
July	105.0	Year ago	96.0	July	111.5	Year ago	101.7

August Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$338	$195	$645	$375	$715	$390
Lowest	200	159	400	268	410	245
August aver.	256	176	482	347	494	334
July aver.	252	181	492	373	492	329

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more; for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.



Trend of sales

AUGUST INSTALLATIONS of oilburners and units are estimated at 3,489, down 90% from the same month last year. Burner permits in 42 cities were off 86.6%, and reporting key dealers indicate a decline of 94.5%. The August figure compares with 5,911 in July and 7,264 in June. Future sales of home heating burners will be limited almost exclusively to those permitted under P-84, where the old one breaks down and the system cannot be converted to coal, and to Government purchases. Replacement business probably will not drop much lower than at present, for prewar replacements ran upward of 5,000 a month. Among permit reporting cities, only Norfolk showed a gain.

PRICES: Retail prices averaged slightly off for the month on the index, as dealers saw less chance to unload their stocks. Wholesale prices were decidedly up, a full 5%, not necessarily reflecting actual price list or discount changes, but rather small quantity buying, thus getting into smaller discount brackets. Noticeable in the reports from dealers was a shrinkage in ratio of conversion burner sales below $200, in boiler-burner units below $400 and in furnace-burner units above $400.

STOCKS: Reporting key dealers had on hand an average of 26 burners and units at the month end, compared with 21 each the previous month. Had they known that the provision in L-79, Amended, permitting replacement sales for oil saving, was to be repealed, this stock increase would hardly have occurred. Total stocks of oilburners and integral units in the country August 31 were about 71,000.

SERVICE INCOME: August service income of key dealers averaged $2216, compared with $1502 a year ago for the same group. July average was $1546, June was $1981. Considering the job of fuel-saving adjustments needed before heating starts this season, service income this summer should have been much higher.

SERVICE MANPOWER: Because so many oilburner service men have gone into the armed forces or into civilian war work, the shortage of good men is acute; many burners cannot be properly taken care of this season. 93% of reporting dealers say they must have more men, but haven't been able to find them; only 7% say ad-

ditional men are available. These dealers have an average of 2763 customers depending upon them for service, with slightly more than five men available, on the average. Each service man must take care of 526 burners, averaging 1.65 calls each during the next 12 months, or 868 calls. This would be easy if they were evenly distributed over each day through the year, which they won't be. In a study made in December last year, covering service men's activities for the full year 1941 it was learned that 241 service men had looked after 58,994 burners, averaging 1.65 calls to each burner, or they had made a total of 97,251 calls. Thus, each man took care of 244 burners, making 403 calls to do it. On that basis the industry today has less than half the service men it needs, while demand for fuel-saving adjustments is greater than ever. Much of this manpower shortage results from small dealers quitting business.

DEALER MORTALITY: During the past 12 months 23% of oilburner dealers have closed up shop for the duration. Mainly small dealers with little fixed investment, and the boss himself more often than not an experienced mechanic, total personnel has shifted to the nearest ship yard or cartridge plant. Secondary markets are the hardest hit by this movement. Average for smaller cities is 30% mortality; for large cities 14%. Oilheating homeowners in Framingham, Hartford, Lancaster, New Britain, had best give their burners tender care; they'll wait a while for service when they need it.

CONVERSION TO COAL: The change from the previous month in number of conversions is inconsequential. Averaging all reporting key dealers from District 1, they find that 95/100 of 1% of oilheating users in their markets have converted. While this is a change from 68/100 of 1% a month ago, it still has little bearing on fuel demand. No District 2 dealer knows of any conversions. There will be a few, now that rationing is announced to include that section.

SELLING OTHER PRODUCTS: With homeowners much more interested in fuel conservation than conversion, sales of insulation, weatherstrip and storm sash are booming. Some oilheating dealers have climbed aboard, find sailing even more profitable than when burners were selling well. Selling insulation are 31% of all reporting dealers; 10% sell weatherstrip and 14% sell storm sash. Major difficulty of getting into these lines is finding a factory that hasn't all it can handle.

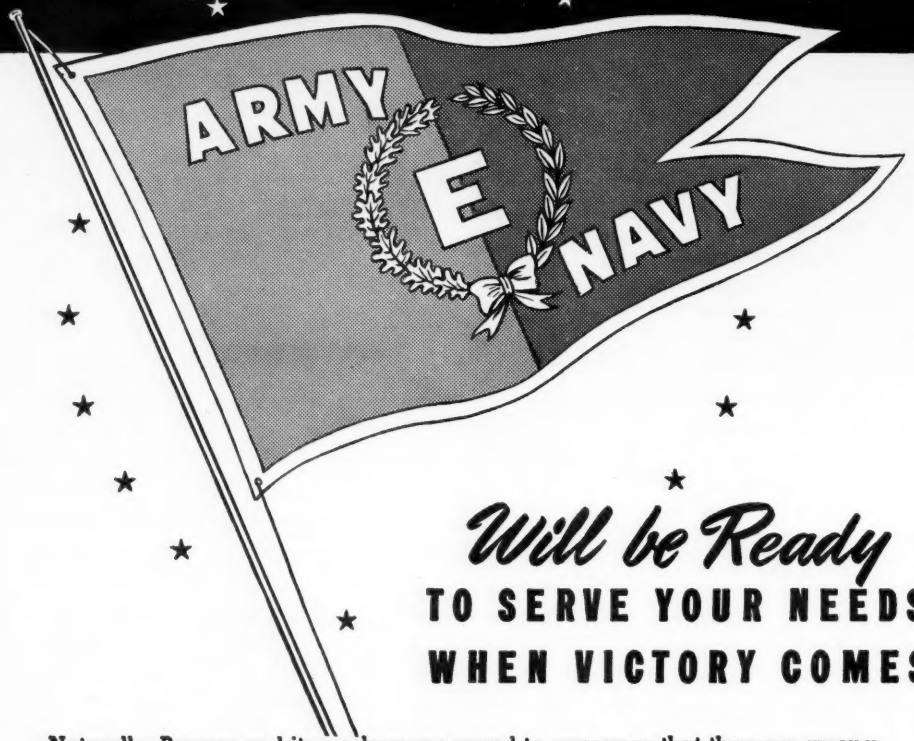
Oilburner* and Building Permits

	OILBURNERS				DWELLINGS			
	Aug. 1942	Aug. 1941	8 MONTHS 1942	8 MONTHS 1941	Aug. 1942	Aug. 1941	8 MONTHS 1942	8 MONTHS 1941
Baltimore, Maryland	98	326	1410	3371	12	583	1103	2895
Binghamton, New York	..	..	..	..	0	12	15	72
Bloomfield, N. J.	..	..	..	..	0	20	116	152
Boston, Massachusetts	31	102	540	1089	23	26	112	308
Bridgeport, Conn.	7	62	184	377	..	..	..	..
Des Moines, Iowa	..	..	..	..	6	101	513	554
Detroit, Michigan	..	..	..	..	466	933	5639	8049
Elizabeth, N. J.	0	26	51	173	0	4	5	28
Freeport, New York	1	13	53	138	..	..	..	..
Greenwich, Conn.	..	..	..	..	1	21	23	127
Hackensack, N. J.	..	..	..	..	0	17	40	94
Hartford, Conn.	17	71	285	509	..	..	..	..
Hudson County, N. J.	7	96	390	817	..	..	..	..
Irvington, N. J.	1	8	49	98	0	0	38	8
Lynn, Massachusetts	..	..	..	..	0	8	26	91
Meriden, Conn.	2	8	..	104	..	..	..	..
Milwaukee, Wisc.	5	50	187	336	33	89	516	708
Minneapolis, Minn.	24	93	308	632	27	105	354	855
Montclair, N. J.	0	21	38	115	..	..	..	..
Morristown, N. J.	..	..	..	..	0	1	6	8
Mt. Vernon, New York	0	24	73	218	..	..	..	..
New Bedford, Mass.	3	18	121	184	..	..	..	..
New Haven, Conn.	10	43	68	231	..	..	..	..
New Orleans, La.	3	2	20	16	..	..	..	..
New Rochelle, N. Y.	0	10	41	97	0	1	19	35
New York City (total)	71	1394	3175	10153	..	..	..	..
Brooklyn-Queens	63	1090	2453	8529	..	..	..	..
Manhattan, Bronx, Rchd.	8	304	722	1624	..	..	..	..
Norfolk, Virginia	118	27	792	477	83	223	882	672
Oakland, Calif.	0	15	14	66	..	..	..	..
Omaha, Nebraska	5	124	263	494	15	139	296	674
Orange, New Jersey	0	15	20	66	0	2	3	12
Passaic, New Jersey	0	12	32	84	..	..	..	..
Paterson, N. J.	1	18	44	141	0	9	24	148
Plainfield, N. J.	..	..	..	..	0	3	37	32
Portland, Maine	1	24	65	196	34	10	57	101
Portland, Oregon	13	296	949	1638	..	..	..	..
Providence, R. I.	3	45	198	460	1	17	40	128
Reading, Penna.	..	..	..	..	0	6	8	36
Richmond, Virginia	10	55	79	363	49	39	274	481
Rockville Center, N. Y.	1	26	59	164	0	8	14	115
Salem, Massachusetts	0	6	18	86	0	7	7	26
St. Louis, Missouri	19	69	305	363	46	88	..	..
St. Paul, Minnesota	16	219	380	886	10	83	192	583
Schenectady, N. Y.	8	47	..	326	..	..	..	..
Seattle, Washington	..	..	..	..	84	256	1546	1989
Springfield, Mass.	..	..	..	..	100	39	410	187
Stamford, Conn.	2	20	48	131	..	..	..	..
Syracuse, New York	2	3	21	53	7	7	88	78
Trenton, New Jersey	..	..	..	..	1	1	2	2
Utica, New York	..	..	..	..	18	12	75	32
Washington, D. C.	23	279	854	2120	..	..	..	..
West Orange, N. J.	..	..	..	..	0	16	20	98
White Plains, N. Y.	3	30	46	180	0	4	3	43
Wilmington, Delaware	1	17	98	306	0	17	13	116
Worcester, Mass.	10	63	198	475	..	..	..	..
Yonkers, New York	1	44	126	327	..	..	..	..
Totals	517	3821	11602	27956	1016	2907	12516	19537
Percent Change	—86.6	..	—58.6	..	—65.2	..	—38.0	..

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

DEALER COMMENTS: Dealer thinking this month is not pointed in any one direction, though Washington gets its share of spanking. Critical comments range . . . "Too many cooks spoil the broth; one good man in Washington could end the fueloil chaos; situation badly handled . . . Not fit to print . . . If they cut fueloil our Government will have in November the biggest strike they ever had; CIO antics will look like a Sunday School picnic in comparison . . . We need relaxing of regulations to let us sell our present burner stocks . . . Just why we can't install burners from stock, but can install stokers, is mysterious; we have 2/3 of our season's oil supply on hand now, or in customers' tanks (Nebr.) . . . Unless restrictions are eased, this will be our last season." On the brighter side . . . "Insulation business makes up loss of burner volume . . . Service is good; vacuum cleaning excellent; our best August in 20 years.

THE PRECISION MANUFACTURING AND EFFICIENCY THAT HAVE EARNED THE . . .



Will be Ready
TO SERVE YOUR NEEDS WHEN VICTORY COMES

Naturally, Bowser and its workers are proud to announce that they are among the very first to be honored with the Army-Navy "E" Production Award for a job well done. To continue producing more . . . and more . . . is a job to which Bowser is pledged. For among all things, Victory must come first! When the day of Victory arrives, the engineering and manufacturing skill that have made Bowser a trustworthy and honorable name will be ready to serve you with new and even better products — products designed to do their job well — products a step ahead in efficiency and value.

BOWSER
ESTABLISHED 1885

S. F. BOWSER & COMPANY, INC.

FORT WAYNE, INDIANA

When We Come Marching Home

Like the men who have put on the khaki or the blue for the duration, the various components of the automatic heating industry have also "joined up" for military service. The precision skills and facilities which last year produced the machines and controls to warm our homes are this year putting the heat on the axis with a variety of essential war materials.

When the boys in khaki and blue come back to civilian life—and most of them, thank God, will come back unharmed—they will bring stronger bodies and clearer heads as the result of their war experience. We believe the same causes will have a similar effect upon the erstwhile makers of oil burners and accessories, and that the result will be a stronger industry.

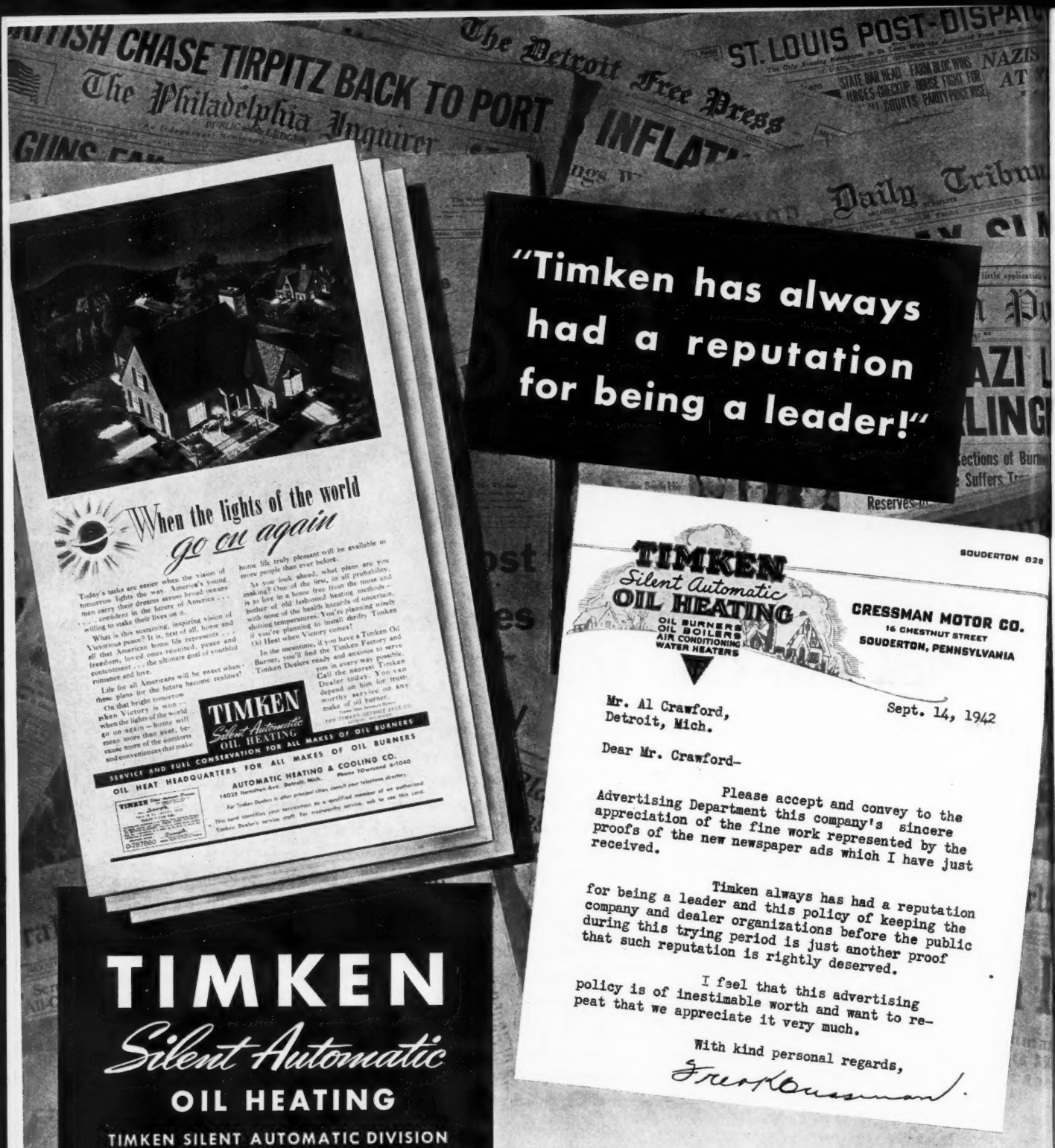
For ourselves, we know that war needs have taught us new precision, new production techniques, which will make our peace-time products better than ever before. We believe this experience is common to all American industry, so that definitely better things to sell, at definitely more attractive prices, will make for better living for all of us when we come marching home.

PERFEX CORPORATION

500 West Oklahoma Avenue Milwaukee, Wisconsin

MAKERS OF

Twin Contact Controls


"Timken has always had a reputation for being a leader!"
When the lights of the world go on again
TIMKEN
Silent Automatic
OIL HEATING
SERVICE AND FUEL CONSERVATION FOR ALL MAKES OF OIL BURNERS
OIL HEAT HEADQUARTERS FOR ALL MAKES OF OIL BURNERS
AUTOMATIC HEATING & COOLING CO.
TIMKEN
Silent Automatic
OIL HEATING
OIL BURNERS
OIL BOILERS
AIR CONDITIONING
WATER HEATERS
CRESSMAN MOTOR CO.
16 CHESTNUT STREET
SOUDERTON, PENNSYLVANIA
SOUDERTON 828
Mr. Al Crawford,
Detroit, Mich.
Sept. 14, 1942
Dear Mr. Crawford-
Please accept and convey to the Advertising Department this company's sincere appreciation of the fine work represented by the proofs of the new newspaper ads which I have just received.
Timken always has had a reputation for being a leader and this policy of keeping the company and dealer organizations before the public during this trying period is just another proof that such reputation is rightly deserved.
I feel that this advertising policy is of inestimable worth and want to repeat that we appreciate it very much.
With kind personal regards,
Frank Cressman
TIMKEN
Silent Automatic
OIL HEATING
TIMKEN SILENT AUTOMATIC DIVISION
The Timken-Detroit Axle Company, Detroit, Michigan

Timken's great new national newspaper campaign, now being seen and read by 9,500,000 families, is winning and holding goodwill for Timken dealers . . . building additional service and accessories business for them . . . helping the nation keep the home fires burning. Yet is only one of many new business-getting weapons Timken is throwing into the battle to protect Timken dealers' profits. Write for the full story today!

ARMY E NAVY

"SUCH A REPUTATION IS RIGHTLY DESERVED"

Fueloil Rationing

Why and How

By Joel Dean,
Director, Fuel Rationing Division, OPA

THE industry clearly recognizes the nature of the transportation shortage which has necessitated the rationing of gasoline and fuel oil. The most important of the numerous causes of the shortage is the inadequacy of alternative transportation to take the place of tankers. Before the war, 95% of all petroleum consumed in the Eastern area was supplied by tanker shipments. The toll of tankers by Axis submarines, plus diversion of tankers to war use, has reduced this form of transportation to a negligible quantity.

Available tank cars, pipelines, tank trucks and barges on inland waterways are transporting oil East. However, in spite of tremendous increases in this form of petroleum shipment, thus far it has been impossible to supply the East with enough petroleum to fulfill minimum civilian and war production needs.

Since nearly 70% of the tank cars in the country are now carrying petroleum to Eastern States, a transportation shortage is developing in Mid-Western sections.

The expected extent of the oil shortage this winter has prompted the War Production Board to direct the Office of Price Administration to ration fuel oil in the East and the Mid-West.

As yet, the petroleum transport shortage has not hurt the war effort. No war production plant has been forced to close down, nor has any airplane in the interceptor command been grounded for lack of gasoline. The concern of the government is to prevent this shortage from developing into fuel deficit so serious as to force desperate choices among equally unpleasant options—shutdown of war production plants, inadequate supplies for the armed forces, or homes so cold as to endanger health.

The oil heating industry realizes—more than does the average householder—how widely the demand for fuel oil fluctuates seasonally. Using the average daily demand on an annual basis as 100, the demand for light heating fuel oil in the East ranges from 50.9 in July to 170.8 in January. Industrial oils follow a similar, though more constant trend.

It has been suggested that the heavy demand for fuel oil during the winter is offset by the opposite trend in gasoline consumption, which reaches its peak during the summer months. Actually, the winter demand for fuel oil is so much greater that it would be impossible to ship oil into the East at the rate it is normally used in winter if we took every automobile and taxicab off the streets.

The industry is also familiar with another variant which the householder may not recognize—the fact that the demand may vary as much as 50% from winter to winter, depending on how much the temperature varies from normal. There is no way of meeting urgent winter needs except by storing up oil in the summer and fall. Despite the tremendous efforts that have been made, these stocks are so dangerously low that fuel oil must still be rationed this winter.

How to Conserve Fuel Oil

Fuel distributors, who have won the goodwill of their customers, can in this situation render important services to both their country and their customers by showing them how to economize on fueloil so necessary to the success of the war and the comfort of the customer. This essential conservation can be accomplished in two ways; first, by generating heat in the boiler or furnace in the most efficient way possible, and second, by keeping the heat *in* the house after it has been generated.

Patriotism alone should motivate saving on the part of householders; in the rare instances where it is not sufficient cause, a session with a pencil and pad will often clinch the argument in favor of conservation, for the home owner can then *see* what conservation means to him in dollar-and-cents savings.

Checking heating plant efficiency is not a new story to people in the heating business—but it is to many householders. It is estimated that 17 out of 20 oil burners in American homes are about to start their third to twentieth (or more) year of service. Government data indicate that when "average" heating plants are adjusted to Department of Commerce, Bureau of Standards efficiency ratings, savings up to 25% or 30% can be effected.

Improve Efficiency

Frequently, proper adjustment and repairs will produce up to 40% increases in efficiency. Among the adjustments and minor changes which can be made to conserve fuel are: the replacement of nozzles; change in type of radiator valves; cleaning of boilers and flues; installation of new baffles, new combustion chambers, new draft regulators, and a general "tuning" of the entire unit.

Combustion testing of oil burners is a job for the experts if the highest possible efficiency is to be obtained. In making the adjustments, the expert service man should use combustion testing instruments on all oil burners.

A good service man applies three instruments to the testing of an oil heating plant. These are a stack thermometer, a draft gauge and a flue gas analyzer.

As the industry has always recognized, tests made on an oil burner with these three combustion instruments are analogous to miles-per-gallon tests on an automobile. They determine, in effect, the number of "miles" per gallon the oil burner is getting for the oil used.

Few home owners know whether their oil burner is in the class with an inefficient four cylinder car getting eight miles

to the gallon, or with an efficient car of the same size getting 20 miles. An efficient burner may lose as little as 15% of its heat up the chimney; an inefficient burner as high as 60%.

In addition to revealing the amount of waste, combustion testing instruments generally give a good clue to the reasons for low efficiency. They indicate to the service man what steps must be taken to reduce wasteful oil consumption.

None of these conservation steps is "news" to those engaged in the fuel oil and oil heating business. But, in too many cases, they are news to the home owner. Householders should be encouraged by their fuel dealers to have these checks made; goodwill gained will be well worthwhile to the dealers themselves.

In addition to having the burner itself checked, the home owner should be advised to have heating pipes, automatic heating controls, the water heating system and the chimney checked.

Heating pipes which sag or are partly clogged with scale or sediment slow down the distribution of steam or water, and waste fuel by preventing the heat generated by the boiler from reaching the radiators quickly. As any heating engineer knows, the longer the time that elapses between the boiler and radiator, the less heat that reaches the radiator. In addition, insulation on heating pipes should be examined regularly; uninsulated or poorly insulated pipes greatly reduce the amount of heat delivered to radiators.

The accuracy of automatic heating controls should also be checked. Householders should also be reminded again that turning down the thermostat at night, and whenever they are away from the house for any time will save fuel.

You can also help the home owner improve the efficiency of his water heating system. While the heating of service water is not a large item in the fuel budget, there is often, nonetheless, a great deal of fuel wasted by keeping the temperature of the water too high. Most families could adjust themselves to having hot water only at the times when it is generally needed most—mornings, at night and on washdays—and thereby save additional fuel. When the hot water tank is attached to the furnace, the householder might be able to turn off the hot water heater during the day, and let the hot water from the boiler or furnace supply daytime needs. All piping connections should also be tight, storage tanks and piping insulated, and the firing equipment, if separate from the boiler, be clean and in proper adjustment.

Chimneys should be inspected at least once every year to be sure that they are clean, tight and free from obstructions. Likewise, the smoke pipe should be inspected and cleaned, and anything that falls into the chimney, obstructing its service, should be immediately removed.

Because of your knowledge of these matters and your familiarity with the customers' heating equipment you are in a position to make a great contribution to war fuel conservation, and to customer comfort and goodwill by selling these savings to your customers.

Rationing Objectives

The fuel rationing program in brief centers around four objectives: (1) curtailment of fuel oil to the extent demanded by the petroleum transportation shortage; (2) equitable distribution of available supplies; (3) stimulation to convert to coal or to conserve by improving burner efficiency and by reducing structural heat loss; (4) consideration of health factors, age factors, and special heating requirements.

The rationing covers all fuel oils (both distillate and residual, grades No. 1 through No. 6, including diesel fuel and kerosene) and includes all uses (home heating, industrial, commercial, military and miscellaneous uses).

Although the same basic principles apply to all users, the following *types of establishment* are treated in slightly different ways to insure equality in the granting of rations:

1. Private Homes
2. Multiple Dwellings
3. Commercial, Industrial and Institutional establishments of all types

Also the following *uses* are treated in slightly different ways for the same reason:

1. Water heating (domestic and commercial)
2. Miscellaneous (domestic and agricultural use for brooders, cooking, lighting, tractors and the like)
3. Industrial processing or power
4. Military uses

Every purchase of distillate fuel, except for use by the armed forces where purchase is made by acknowledgment receipt, requires the presentation of coupons secured from Local War Price and Rationing Boards. Residual fuels for nonheating purposes are covered by coupons of definite gallonage. Indefinite value coupons that can be varied in gallonage from period to period are used in one and ten unit sizes for space heating purposes. The initial value of these coupons is ten gal-

(*Continued on page* 55)

Who's Who In Fueloil Rationing Administration

THE DIRECTOR of the new Division is Joel Dean, who was chief of the former Fuel Rationing Branch. Mr. Dean, a member of the faculty of the University of Chicago, and an industrial engineer, came to OPA in 1941 as Price Executive in charge of the Machinery Branch. He has been in charge of the gasoline rationing program since its inception.

The Assistant Director of the new Division is Wallace S. Sayre, who was chief of the Operations Section of the Fuel Rationing Branch. He was formerly one of New York City's three Civil Service Commissioners.

The new Fuel Rationing Division will have three operating branches: Gasoline Rationing Branch, Fuel Oil Rationing Branch, and Industry Relations Branch.

The Chief of the Gasoline Rationing Branch is John R. Richards, formerly Associate Chief of the Fuel Rationing Branch. Mr. Richards was an Associate Price Executive of the Machinery Branch under Mr. Dean. He was previously the director of student personnel at Wayne University.

John G. Neukom, the new Chief of the Fuel Oil Rationing Branch, is a member of McKinsey, Kearney and Company, Chicago, industrial engineers. Mr. Neukom came to Washington last spring to serve with Mr. Dean as Chief of the Operations Section of the Fuel Rationing Branch.

Paul R. Baugh, Chief of Industry Relations Branch, was an account executive with Erwin, Wasey and Company, New York Advertising agency handling oil company advertising, before coming to OPA last March to head up trade relations activities in the fuel rationing branch.

Thrift Rewarded

Efficient Homes and Burners Get Minimum Ration Cut

By

Robert Gray

WHILE public announcement of the details of fueloil rationing may not be made until the plan goes into operation on October 15th, the methods to be followed were pretty well established in late September, and if further changes are made they will probably affect only administrative procedure.

Two important revisions to earlier preliminary drafts were made in recent days: The overall or average cut is to be 33-1/3% from normal consumption instead of 25%, and all buildings other than residences are to get a uniform 33-1/3% cut instead of basing gallonage allowance on feet of standing radiation.

Homes with high thermal efficiency, those having frugal heating plants and facilities to hold the heat in the house, will fare best; their cut can be as modest as 15%. The most wasteful houses and heating plants may be cut as much as 40 to 50%.

In deciding to slash deeper than originally believed necessary, the Office of Price Administration was influenced by the supply estimates of the War Production Board, which were less optimistic than those of the Office of Petroleum Coordinator.

Further, OPA felt that there are enough uncertainties in the outlook to justify giving homeowners the full jolt now so they would seriously set about conservation measures or conversion to coal, rather than encouraging them to coast through the mild Fall months and then face possible deeper cuts when frigid days arrive.

Rationing is to control all distillate and residual fueloils, Nos. 1 to 6, inc., including those used for purposes other than heating. This will forestall bootlegging, or using for heating those oils earmarked for other purposes.

The thirty Eastern and Midwest States to be rationed are divided into four main zones based on temperature, primarily to control general movement of supplies and to be able to develop seasonal time periods for coupons. However, to calculate the degree-day factor in the rationing formula, each zone will be divided into as many subzones as necessary.

With the heating season divided into five equal degree-day periods, tentative coupon expiration dates, starting from October 1, are:

	ZONE			
Period	*A*	*B*	*C*	*D*
1	Nov. 29	Dec. 2	Dec. 3	Dec. 5
2	Jan. 6	Jan. 5	Jan. 4	Jan. 2
3	Feb. 8	Feb. 6	Feb. 2	Feb. 5
4	Mar. 17	Mar. 12	Mar. 6	Mar. 6
5	Sept. 30	Sept. 30	Sept. 30	Sept. 30

An overlap of one week each way is to be allowed at the end of each period for convenience of the fueloil distributor in making deliveries in normal amounts or to compensate for unusually severe weather. For example, if Period 1 ends on December 2, the distributor is permitted to accept Period 2 coupons a week before that date, and to accept Period 1 coupons during the first week of Period 2, but not more than 12½% of any period's ration. Coupons of indefinite value will be used for space heating to permit further adjustment for abnormal weather.

The customer may, if he wishes, deposit his coupon book with his fueloil distributor so that normal degree-day operation will not be hampered.

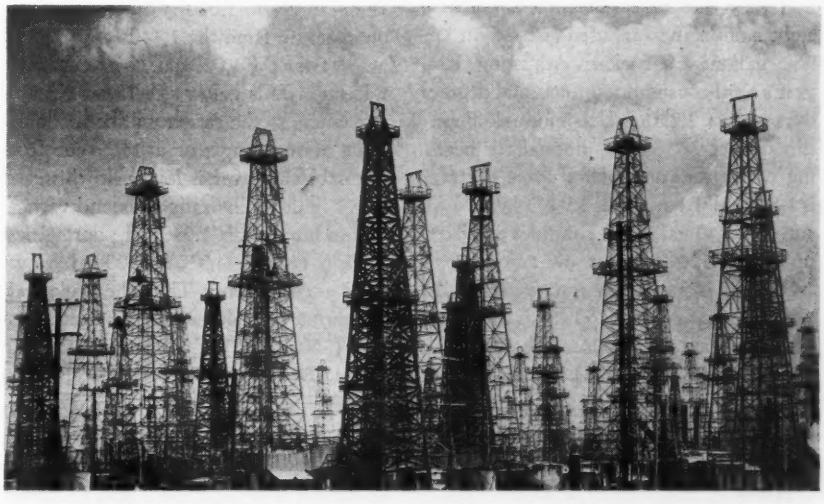
In working out the basic ration for heating private dwellings, these are identified as a building or structure housing not more than three families, and having 70% or more of the total floor space used for residential purposes.

Two major yardsticks determine how much oil a home is to get: consumption last year (June 1, 1941 to May 31, 1942) and square feet of floor space in the living area of the house. In checking several hundred houses OPA found that 25% of them have "average" thermal efficiency so they adopted as part of the formula a "range" which covers this 25%. Houses with thermal efficiency falling within this range (measured in gallons per square foot of floor space) will get a straight 33-1/3% cut from last year's consumption, adjusted to normal.

Better houses, with higher thermal efficiency, will not be cut as much. They will get the bottom limit of the "range" or a 15% cut from normal, whichever is lower. This is made clearer by the chart.

More wasteful houses can get only the upper limit of the "range" for their size in square feet.

(*Continued on page* 20)



Remind *your customers that the United States has 2/3 of the world's oil*

TYPICAL EXAMPLES

THE RATIONING CHART at the right was made up in the manner described on the page opposite. The dotted lines represent four houses located in New York and the rationing calculation for each (unless last minute changes are made by OPA) follows:

It is necessary to know first that normal degree days for New York are 5,290; that last season's degree days were 4,708. Thus, to adjust last season's oil consumption to normal in this city, multiply by 1.123. It is also necessary to recall that normal consumption for domestic hot water is 15 gallons per month plus 5 gallons monthly for each occupant, in the rationing directions.

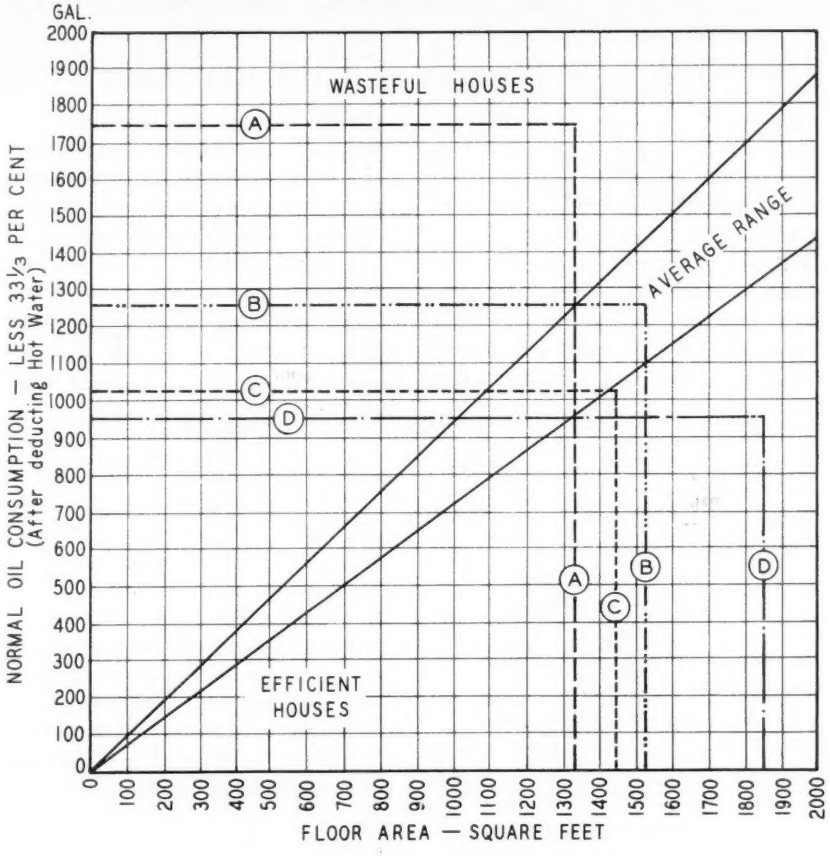
Home A. Floor space 1,325 sq. ft.; four in family; use oil for heating hot water 12 months in year; used last season 2,711 gal. Adjusting last year's consumption to normal degree-days indicates 3,045 gal. as normal. From this deduct 420 gal. normal for heating water, and normal for space heating is 2,625 gal. Reduce this 33-1/3% as basic cut, get 1,750 gal. Run lines on chart up from 1,325 sq. ft. point and across from 1,750 gal. point. The point where they intersect is far above the range; the space heating ration is the top limit of the range (point where vertical line crosses top line of range) or 1,255 gal. Hot water heating allowance is normal less 1/3 (420-140) or 280 gal. This added to the space ration, 1,255 + 280, is 1,535 gal., or the total ration. This is a 49.6% cut from normal.

Home B. Floor space 1,520 sq. ft.; five in family; use oil for heating hot water eight months in year; used last season 1,968 gallons of fueloil. Adjusting last year's total consumption to normal degree days shows 2,210 gal. as normal. From this deduct 320 gal. as normal for heating water, and normal for space heating is 1,890 gal. Reduce this 33-1/3% as basic cut, to 1,260 gal. Now run lines on chart up from 1,520-ft. point and across from 1,260-gal. point. Their intersection falls within the range, so 1,260 gal. is the space heating ration. Add allowance for heating water (320 less 1/3) or 213 gal. to the space heating ration, and total ration for this house is 1,473 gal., or just 33-1/3% off normal.

Home C. Floor area 1,440 sq. ft.; three in family; use oil for heating water 12 months in year; used last season 1,683 gal. of fueloil. Adjusting last season's consumption to normal degree days brings 1,890 gal. as normal. From this deduct 360 gal. as normal for water heating, leaving 1,530 gal. as normal for space heating. Reduce this one-third, as basic cut, (1,530 — 510) to 1,020 gal. Now run lines on chart up from the 1,440 ft. point and across from the 1,020 gal. point. Their intersection falls below the lower limit of the range, so the ration will be the lower limit of the range, or a 15% cut from normal, whichever is lower. In this case, lower limit of the range (extend vertical line to cross it) is 1,040 gal.; normal less 15% is (1,530 — 230) 1,300 gal., so we must use the former. Thus, the space heating ration is 1,040; add water heating ration (360 — 120) of 240 gal. and the man gets 1,280 gal. This is a 32.2% cut from normal.

Basic Rationing Chart for Space Heating

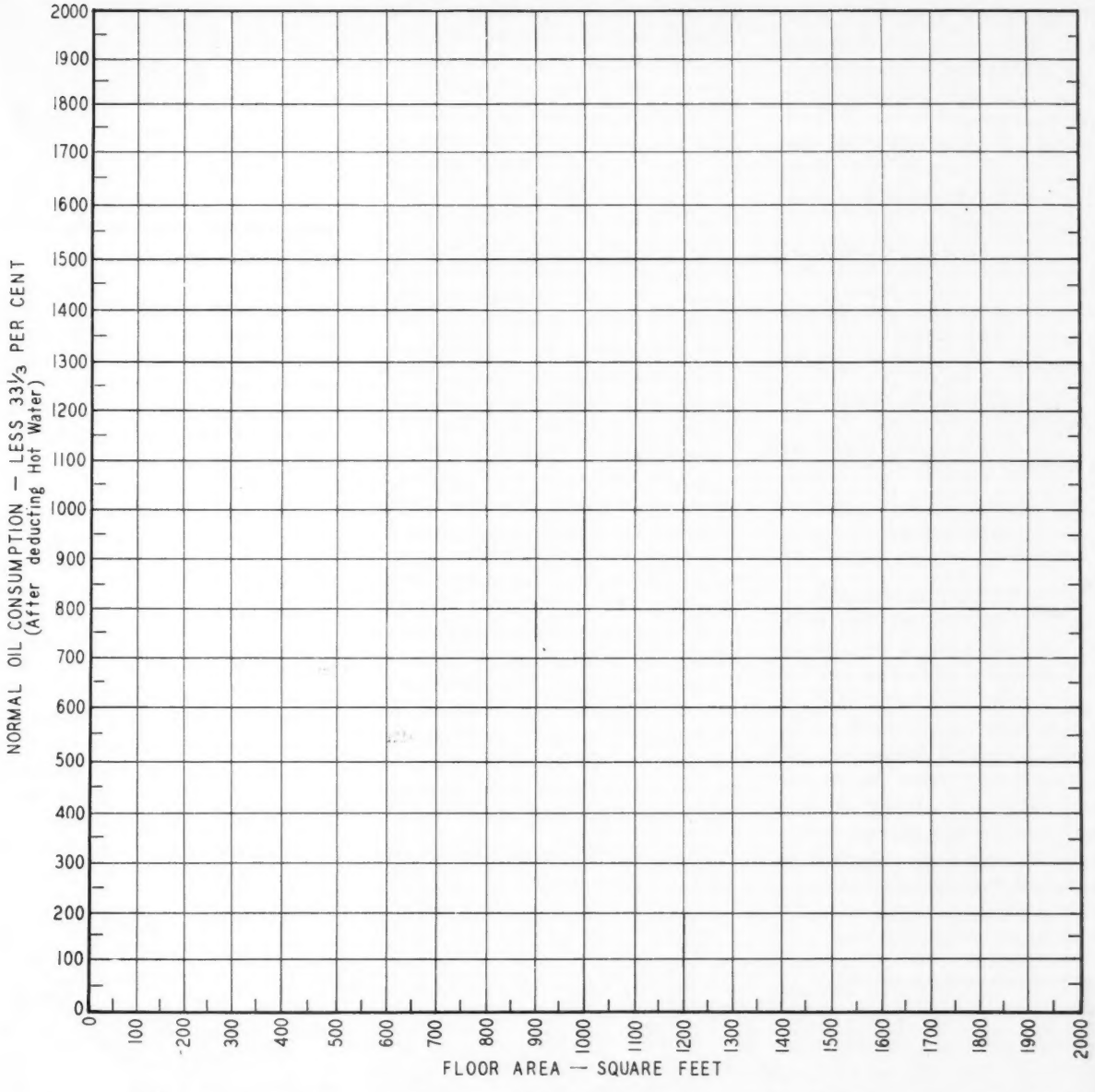
(for 5,290 Degree Days—New York City area)



Home D. Floor space 1,850 sq. ft.; four in family; use oil for heating water eight months in year; used last season 1,532 gal. of fueloil. Adjusting last season's consumption to normal degree days brings 1,720 gal. Deduct normal hot water allowance of 280 gal. and normal for space heating is 1,440 gal. Apply to this figure the basic cut of one-third to arrive at 960 gal. Run lines on chart up from the 1,850 ft. point and across from the 960 gal. point. Again the intersection falls below the lower limit of the range, so ration will be lower limit of range or 85% of normal, whichever is the lower. For this house the lower limit of the range is 1,330 gal. (by extending vertical line up to cross lower range line), while a 15% cut from normal (1,440 — 216) is 1,224. Since this latter is the lower of the two it is the ration. Add hot water allowance (280 less 1/3) of 187 gal. and the total ration is 1,411. This is a cut of only 17.9% from normal.

In determining the square foot area for a house, rationing board instructions say specifically to exclude laundries, basements, attics, hobby shops, garages and sun porches unless the sun porch is regularly used as a bed room.

Make Your Own Chart



TO MAKE A CHART like the one on the opposite page for use in your city it is only necessary to know your *normal* degree days. Then apply the formula described in another section of this article to get the upper and lower limits of the range, or in other words, to be able to draw in the two diagonal lines.

This formula, as you probably recall, is for the upper line:

$$\frac{\text{Floor space x Normal degree days}}{5600}$$

Interestingly, calculating the formula for a single house, will establish the line and the line fits all other houses in the city.

Let's take a theoretical house. Assume it has 2,000 sq. ft. of living area; also assume, for easy figuring, that normal degree days in your community are 5,000.

The formula, then, for the upper line is:

$$\frac{2{,}000 \times 5{,}000}{5{,}600} \text{ or } 1{,}786$$

Now notice that the 2,000 ft. house is the last line on the right of the chart. Run your pencil up this line until you are opposite 1,786 on the gallon scale at the left. From this point draw a line to the lower left corner of the chart. This establishes upper limit of the range for this city.

To get the lower limit line, use the same method, but a denominator of 7,300 in the formula. Thus:

$$\frac{\text{2,000 sq. ft. x 5,000 D-D}}{7{,}300} \text{ or } 1{,}370$$

Run your pencil up the 2,000 ft. line until it is opposite the 1,370 gal. point on the left hand scale, and mark the point. Draw a line from there to the lower left hand corner, and you have established the lower limit of the range for all houses of whatever size, in a 5,000 D-D city. Be sure, of course, to use your own correct *normal* degree-days in your chart.

Thrift Rewarded

(Continued from page 17)

To determine the "range" three factors are used: floor area, normal degree-days for the locality and a denominator of 5600 and 7300, respectively, for the upper and lower limits.

Example: A New York house with 1500 square feet of living area; normal degree-days 5290. The upper limit of the range is calculated:

$$\text{Fuel ration} = \frac{\text{Floor area x Degree-days}}{5600}$$

or

$$\text{Fuel ration} = \frac{1500 \times 5290}{5600} = 1417 \text{ Gal.}$$

The lower limit of the range is determined:

$$\text{Fuel ration} = \frac{\text{Floor area x Degree-days}}{7300}$$

or

$$\text{Fuel ration} = \frac{1500 \times 5290}{7300} = 1087 \text{ Gal.}$$

If a cut of 33-1/3% from normal oil consumption for space heating for this particular house falls between 1087 and 1417 gallons, the ration will be the one-third cut.

If a one-third cut for this home falls below the lower limit (below 1087 gal.) the owner will get either the low limit point (1087 gal.) or a 15% cut from his normal consumption, whichever is lower.

If, on the other hand, a one-third cut from normal consumption for this house falls above the upper limit of the range (1417 gal.), that upper limit will be the ration . . . he cannot get more, so his net reduction will be more than 33-1/3%. Several examples of specific houses are shown on the accompanying chart.

Customers' tanks are assumed to have been filled prior to October 1 if they are of 275 gal. capacity; if larger, they were to be 50% filled. When coupon books are issued the local board will tear out 250 gallons value of coupons because of this. Tearing out 250 instead of 275 gives the customer a slight advantage, but OPA knows that tanks are rarely completely filled and is willing to allow that break.

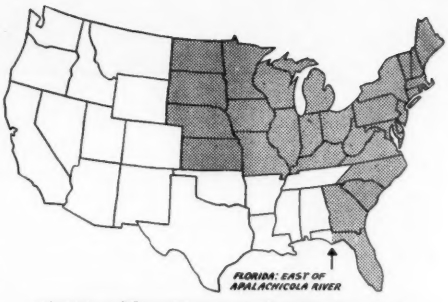
Oilheating users who also heat domestic hot water with oil require special calculation in figuring the total ration. OPA has determined that normal oil consumption for water heating is 15 gallons per month plus 5 gallons per month for each occupant. For a family of four this is 35 gallons per month, or 420 gallons a year as normal if water is heated with oil the year 'round. This is to be cut one-third.

To work this into the ration needs a bit of figuring. It must first be subtracted from normal overall oil consumption so that the space heating formula, as described, can be worked out. Then after the space heating ration is determined, the hot water ration of two-thirds of normal is added in making up the book.

Example: Mr. Green of Greenville used last season for combined space heating and hot water heating 2380 gallons of fueloil. With five in the family, his domestic hot water was heated with oil during eight months of the year. First, raise the total consumption to normal. Greenville last year had 4708 degree-days; normal is 5290. Thus, normal oil consumption would be 2673 gallons.

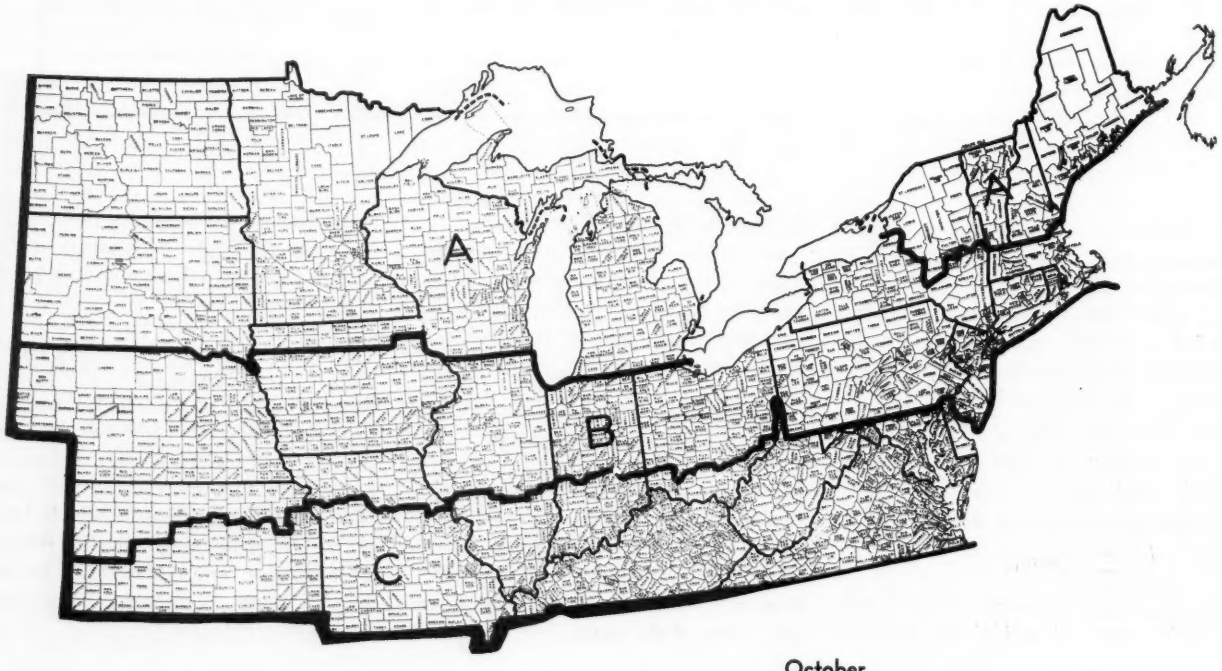
His hot water heating normal is calculated by the method just stated at 320 gallons (8 mos. x 40 gal.). Subtract this from 2673, total normal gallons, and we find that 2353 gallons is normal for space heating. His ration for space heating, determined from the chart, is 1442 gallons. For heating hot water he gets two-thirds of 320 or 213 gallons; that added to 1442 is 1655 gallons, his total ration.

At this point it is well to mention that local rationing boards will not have to make all these calculations; they are to have charts and tables to give them quick answers; the purpose of this article is to



SHADING DENOTES FUEL OIL RATIONED STATES

Rationed area. *Zone D is below Virginia*



bring oilheating dealers and fueloil distributors an insight into the formulas from which local boards are to be instructed; formulas from which their tables are derived.

Commercial and industrial users of oil for heating water will also get a flat one-third cut, except that restaurants may get supplemental rations for this purpose if it is essential for health and sanitation.

The reduction in oil allowed to apartment houses, commercial, institutional and industrial establishments for space heating will be a straight 33-1/3% from last season, adjusted to normal. None of these buildings will be given any oil for heating if their heating plants can be converted back to coal at reasonable cost. In exceptional cases, such as hospitals, where a health factor is involved, supplemental rations will be given, if conversion is impractical.

Space Heaters

For families that use individual space heaters rather than central heating plants the rationing calculation will be somewhat similar to those with central heating plants, though a little more liberal. Local boards will probably have some leeway here. Most users of such equipment have more people per square foot of floor area; it is hard in many cases to get accurate past consumption records; homes with a single-room heater should have less cut than those with a circulating heater that serves the whole house. Specifically, no such family will get more than 85% of estimated normal consumption and the majority much less than that.

Fueloil bought for uses other than space or water heating will be rigidly controlled but not curtailed. Coupons are to be used, but these will not be the regular ration coupon, since the intent is to allow about the same as normal consumption, for which standards are being worked out. Such uses include range burners, kerosene lamps, tractors, brooders, etc., as well as industrial processes. The armed forces, other Government agencies and certain extra large industrial buyers will use, instead of coupons, a form of Acknowledgment Receipt, the intent being that every gallon of oil, for whatever purpose, must be accounted for.

Auxiliary rations will be given for space heating in cases of extreme hardship, but proof of need must be conclusive; the general policy is to be tight on this. No auxiliary rations are to be allowed if the heating plant can be converted to coal at reasonable cost. "Reasonable cost" factor for conversion is expected to be $2 or less per barrel of oil, normal consumption. Thus, if normal consumption for a home is 2000 gallons, OPA's idea of reasonable cost of converting to coal is around $100, maximum.

If conversion is impossible at reasonable cost, auxiliary rations may be had, on proof of hardship, for:

1. Old age or sickness. A physician's certificate in full detail is necessary, and this must be O.K.'d by the County Health Board or other Public Health officials.

2. Infants in home. If the family has children under four years of age, physician and public health official certificates will probably bring an increased ration. Tentatively, the extra ration is planned to be 125 gallons in Zone A, 100 in Zone B, 75 in Zone C and 50 in Zone D.

3. Families that can prove physical or financial inability to bring the dwelling or burner up to a point of providing 65° temperatures on the base ration. This will be so thoroughly investigated that cases allowed must prove hardship beyond any doubt. Details of the family's financial status will be investigated, house and heating plant will be studied by an advisory board of heating engineers. False statements are subject to severe penalties.

4. Persons injured by mistakes of the ration board or supplier will receive adjustments.

5. Leakage from customers' tanks or equipment will be replaced when certified by a technician.

6. Health or sanitation hazards may call for supplemental allowances on proof of need. This applies to hospitals, sanitoriums, for heat and hot water, to restaurants for hot water only.

7. Consumers whose tanks were not filled, as intended, before October 1, if for good cause, may receive a compensating allowance.

8. Persons living in inaccessible areas may use the coupons of more than one ration period, by special permission. This is to prevent dealers having to drive long distances into the country to drop a few gallons.

Forbidden Uses

A few types of fueloil applications are barred, or virtually so, from supply henceforth. These include air-cooling equipment; all new burners, other than replacements, bought after July 31, 1942; oil for coal spraying purposes; industrial, commercial and other large building uses that can convert to coal. Diesel oil for pleasure boating is restricted to conform to gasoline allowances for such uses; luxury enterprises, such as bowling alleys, dance halls, etc., may be denied oil.

Fueloil distributors are to be registered all the way from the one truck peddler back through the various marketing levels to the refinery. Methods of audit control and coupon flow-back are virtually completed, but that's a story in itself.

DEGREE-DAY TABLE

If you do not know the degree-days, both normal and last season, for your community and there is no local weather bureau office, perhaps your newspaper office can help. If not, try your competitors; they may have the figures.

	1941-42 Degree Days	Normal Degree Days
Albany	6377	6516†
Atlanta	2880	2891*
Baltimore	3802	4590†
Boston	5388	5981†
Buffalo	6286	6782†
Chicago	5547	6378†
Cincinnati	4515	4702*
Cleveland	5572	6174*
Dallas	2405	2455*
Denver	5933	5721†
Des Moines	5739	6336†
Detroit	5808	6454†
Grand Rapids	5815	6642†
Hartford	5662	6380†
Helena	7593	8054*
Houston	1406	1157*
Indianapolis	4795	5471†
Kansas City	4468	5302*
Los Angeles	1328	1475†
Louisville	4032	4180*
Milwaukee	6539	6995†
Minneapolis	6847	7902†
New Orleans	1350	1023*
New York	4708	5290†
Omaha	5794	6229†
Philadelphia	4296	4873†
Pittsburgh	5227	5235*
Portland, Me.	7073	7054†
Portland, Ore.	3980	4047†
Providence	5304	6014*
St. Louis	4168	4658†
Salt Lake City	6321	5553*
San Francisco	2404	2687†
Sault Ste. Marie	8332	9284*
Seattle	4103	4715†
Toledo	5621	6103*
Washington	3900	4583†

†Normals from Weather Bureau.
*Normals from Strock & Hotchkiss "Degree-Day Handbook."

E – for Excellence

Army-Navy Award "Not Easily Won nor Lightly Bestowed"

By
A. E. Coburn

CASUAL newspaper readers may conclude that every plant doing a middling good job of war production is being honored by the Army-Navy "E," but plant managers and employees who have fought their problems and won the award, know that in the words of the manual it is "an honor not easily won nor lightly bestowed." The award, symbolized by a flag over the plant and silver buttons worn by employees, is the armed services' way of expressing their appreciation for outstanding production accomplishments by civilian firms.

Many firms today are doing work that would have been considered impossible a few months ago. Operations that would have been strictly a tool-room job a year ago now are being performed in production—mass production; three shifts a day, seven days a week.

Accurate to 1/10,000"

Oil-O-Matic, Gilbert & Barker, and Westinghouse, for instance, all are making the same complicated piece of equipment of foreign design with innumerable small parts with tolerances of less than one ten-thousandth. For obvious reasons, the parts must be interchangeable regardless of who makes them. Tooling for so delicate and unfamiliar a piece of equipment, scheduling and producing in quantity, is a herculean task, for which each of these companies has been given the award. Nearly a dozen firms which formerly produced for the oil heating industry have won the award for their difficult feats of production.

Mechanical considerations are not the only ones on which the award is based, nor is it given at the whim of some friendly procurement officer. Every plant in production for the war effort is eligible for the award, whether a prime contractor, sub-contractor, large plant or small.

Nominations for the Army-Navy Production Award are made by the procurement officers of the Army, or by local inspectors or supervisors for the Navy in the district in which the plant is located. These nominations are forwarded to an appropriate army supply or navy bureau chief in Washington and submitted with his approval to a board. The board considers quality and quantity of production in the light of available facilities, plus (1) overcoming of production obstacles; (2) avoidance of stoppages; (3) maintenance of fair labor standards; (4) training of additional labor forces; (5) effective management; (6) record on accidents, health, sanitation and plant production; and (7) utilization of subcontracting facilities.

The army board for production awards, appointed by Robert P. Patterson, undersecretary of war, includes: Lt. Gen. William S. Knudsen, director of production, chairman; Maj. Gen. Charles M. Wesson, former chief of ordnance; Brig. Gen. Bennett E. Meyers, executive officer, materiel command, air forces; Edward F. McGrady, special consultant to the secretary of war; A. R. Glancy, chief of production branch, procurement and distribution division, services of supply; J. E. Harrell, civilian personnel division, services of supply.

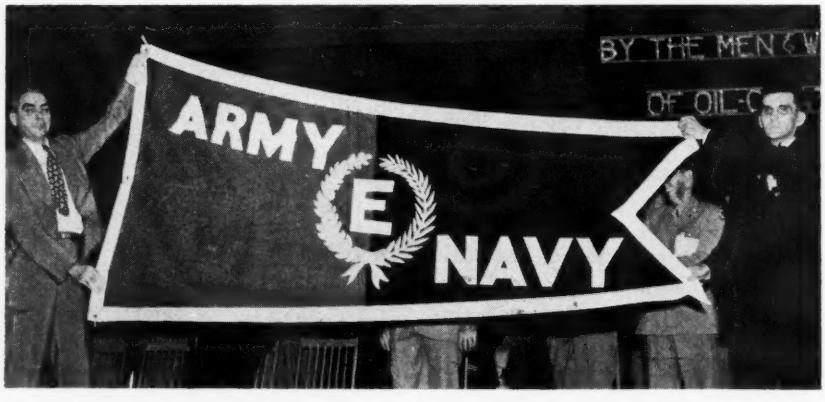
Something of the history of the award is contained in the various presentation programs which are suggested by the award manual.

"In 1906 the Navy instituted in the fleet an award for excellence which has ever since been known as the Navy 'E.' First awarded for excellence in gunnery, it was later extended to include outstanding performance in engineering and communications. An honor not easily won nor lightly bestowed, the Navy 'E' award became and has remained a matter of deep pride to the men of the service who receive it.

"As the rising tide of war in Europe placed a premium on the production of war equipment, the Navy 'E' award was extended to embrace those plants and organizations which showed excellence in the production of ships, weapons and equipment for the Navy.

"Then came Pearl Harbor—and with it a demand for war production such as the world has never known, had never dreamed of. Because this is a mechanized war—demanding a synchronized union of men and machines. The very nature of this war makes workers and fighters an inseparable partnership in the global struggle for human freedom. With this realization has come a grim and enduring resolve to work and fight together for final and complete victory.

"From this high resolve was born the Army-Navy Production Award — joint recognition by our fighting forces of exceptional performance on the production front . . . of the determined, persevering,



Walter W. Williams, president, and Joseph Berry, workers' representative (right) display the company's pennant at Oil-O-Matic's presentation ceremonies.

unbeatable American spirit which can be satisfied only by achieving today what yesterday seemed impossible."

The "E" for Excellence pin adorns the lapel of each honored worker.

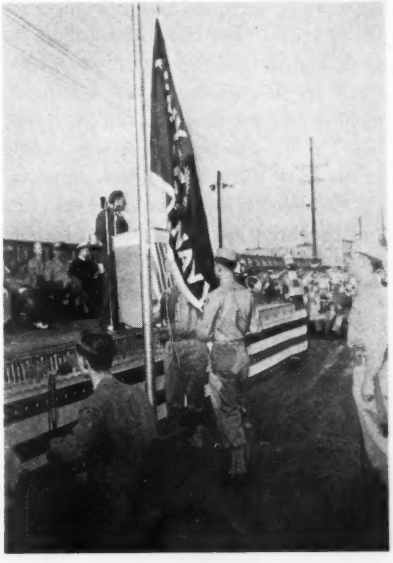
Ceremonies, when held in connection with the presentation of the production award, are usually colorful, but short and to the point. Oil-O-Matic's ceremonies, for instance, lasted exactly 30 minutes from the opening with the singing of The Star Spangled Banner to the close with the singing of America. Ten speakers, including the mayor, the governor, a local judge, military and company officials, participated in a hall packed with employees. Microphones carried the remarks to employees' families in other parts of the building and to two radio stations.

"Remember," said General Ramsey, Commander of the Rock Island Arsenal, "that the flag over your plant was placed there by the Army and Navy of the United States in recognition of the fact that you did a good production job for your country and her allies, and that the war is not over yet. Remember that you are all soldiers on the production line of freedom, and that what you are doing for America is being done voluntarily and freely, without regimentation or coercion."

As indicated by the name and intent of the award, it is not alone in recognition of management, but very much a tribute to workers who are actually producing the equipment. Shop elections usually name a factory worker who receives the symbolic "E" lapel button from an officer of the ordnance district on behalf of the plant employees, and presentation ceremonies frequently are highlighted by the sincerity of production employees' enthusiasm at receiving the award.

For some plants production for our armed forces is a matter only of increasing and intensifying their peacetime production schedules. For other plants, such as most of those in the oil heating business, it has meant a complete change from the products and methods of production of civilian goods. That such changes not only can be made in so short a time, but can be made so effectively as to win government recognition for the quality and quantity of their war production, is a significant commentary on the talents and abilities of the industry's manufacturers.

Among the companies already honored by the Army-Navy Production Award are many that are familiar to oilheating and air conditioning men. These names include: Bethlehem Foundry & Machine Company, S. F. Bowser Company, Carrier Corporation, General Electric Company, Gilbert & Barker Mfg. Company, Kewanee Boiler Corporation, Minneapolis-Honeywell Regulator Company, Philco Corporation, Sundstrand Machine Tool Company, Timken-Detroit Axle Company, Westinghouse Electric & Mfg. Company, and Williams Oil-O-Matic Heating Corporation.



Hugo L. Olson, president accepts the "E" pennant for Sundstrand Machine Tool Company as it is raised by the Color Guard of Camp Grant.

Every member of the oilheating industry can take pride in the flags that now fly above our plants, those that will fly in the future, and in every star that will be awarded for each six-month period of sustained or increased quality production.

British Fuel Ration Small by U. S. Standard

STANDARDS for determining the fuel ration for people in Great Britain, as issued by the Minister of Fuel for the year from July 1, 1942, to June 30, 1943, allow an amount of fuel that would be considered entirely inadequate for most homes in the United States. The fuel ration in Britain, however, covers all fuel and electricity used for heating, cooking and lighting.

The northern allowance, which is applied to all the area from Manchester north, including all of Scotland, allocates 15 Fuel Units for each occupant of a house, plus the following allowances for houses of different sizes:

1 room 80 fuel units
2 rooms 90 fuel units
3 rooms 110 fuel units
4 rooms 120 fuel units
5 rooms 140 fuel units
6 rooms 150 fuel units
7 rooms 170 fuel units (max.)

Thus, a 6-room house occupied by a family of four would receive 210 fuel units in this northern zone. Allowances are less in the Midlands of England and in the South.

Each fuel unit is equal to:
½ cwt. (56 lbs.) of coal or coke, or
500 cu. ft. of mfgd. gas, or
50 KWH of electricity, or
1 gal. of paraffin (oil).

From this total ration the homeowner must heat his northern home, cook his food, and get his electricity for light and power. Assuming that the family of four in their 6-room house uses 100 kilowatt hours (2 fuel units) per month, and burns 3000 cu. ft. of gas for cooking (6 fuel units) per month, this leaves 114 of the 210 annual fuel units to be used for coal, coke and oil. This will allow 114 gallons of oil, or 6,384 lbs of coal or coke.

Edinburgh has a heating load of 4210 degree-days, and Glasgow has a load of 3970 degree-days in a normal year. Though these degree-day figures are calculated on a 60° base, they probably are comparable with American degree-days calculated on a 65° base, since the general heating practice is at least 5° lower in England than here. Few Americans would care to heat their 6-room homes and their hot water on 114 gallons of oil, or on 3.2 American tons of coal, during the coming winter.

Nail Every Btu

Case Histories Show How Much Fueloil is Saved by Doing What

AT NO TIME in the era of oilheating has there been a demand for burner cleaning, adjustment and accessory installation on anything like the scale that appears to be immediately ahead. When home owners learn what their fueloil ration for the season is to be, and compare this with last year's consumption, burner dealers and service men will probably get many calls asking what, if anything, can be done to stretch the heating value of allotments.

With rationing based upon an average reduction of 25% from last year, adjusted to normal degree-days, the most efficient homes and heating plants will have only a 10% cut, but the least efficient houses will probably have a 40% reduction in gallonage. Most of the latter will be old houses with conversion burners.

Modest Cost

Anything that can be done to improve the operating efficiency of these wasteful jobs costs relatively little compared to the added heat that can be sent to the parlor or Aunt Minnie's room from each gallon of oil. Naturally, most of the older houses would be benefited by the application of insulation, storm sash and weatherstrip, yet these are more or less expensive and not all can afford them. Moreover, improvements in that category take about five years to repay their cost in saving.

Fixing up the heating plant at relatively small cost usually pays far bigger dividends. Spending $25 to $50 on a new combustion chamber, a baffle, a draft regulator and a cleaning job will pay for itself as a rule in one season's fuel saving, and, more important this year, will offset a large share of the rationing cut.

This story has been told so many times in recent months that dealers know it by heart, yet most oilheating users don't know it, or they haven't acted on it . . . but soon they will, or else shiver, come Christmas.

In the May issue appeared a case-history story of before-and-after efficiencies recorded by Alpha Utilities, Inc., Delco dealer at Freeport, N. Y. Experiences on 10 jobs described in the story showed that an average outlay of $35 had resulted in a gain of 20.1% in efficiency and a fuel saving of $41.50 in a single season. The average oil saving in those instances would offset a 20% rationing cut.

You can't so readily measure the dollar value of human comfort, but getting 20% more heat from each precious coupon in the ration book would be something to sing about.

Rolf Zurwelle, Alpha's manager at the time of the May story, is now an Army officer, but his capable successor, Alf T. Rylander, still keeps accurate before-and-after charts to show results of heating plant renovations.

Fourteen such jobs done by Mr. Rylander and his men are analyzed in the next-page table. On the first seven all recently done, the basis of comparison is efficiencies. The other seven, done last year, include gallonage for two seasons.

On the first seven jobs listed, improvement in efficiency averaged 30.2%. Omitting No. 7, an exceptionally wasteful job at the start, the other six were improved 18.7%. Fuel saving is at about the same rate. Rightly, No. 7 should not be completely disregarded, for in any group of renovations the particularly bad job shows up every now and then.

To calculate the net saving for the second list shown in the table, Numbers 8 to 13, inclusive, it was necessary to first adjust the oil consumption to normal degree-days for each of the two seasons. Actual degree-days on Long Island in the 1940-41 season were 5,197; in the 1941-42 season 4,708; normal is 5,290.

Chambers *rebuilt with insulating firebrick often raise combustion efficiency.*

The percentage savings listed in the last column are after making this adjustment. Including the ten jobs described in the May issue article and 12 of the 14 in the present table (omitting Nos. 7 and 14) we have 22 representative jobs done by Alpha, and the average fuel saving after fixing them up was 16.9%.

While it doesn't necessarily follow that the difference in the work done at the various houses accounted fully for the wide variation in percentage of fuel saved, yet it is interesting to look at the experience record for general overall results. Average savings through doing specific things to the jobs was:

Number of jobs	*Work done*	*Average oil saving*
1	Turbulator	14.8%
4	New smaller nozzle	8.3
13	Baffle	7.9
8	New chamber	7.9
9	Draft regulator	7.6
6	Vacuum cleaning	5.6
1	Tank jacket	4.7
1	Boiler jacket	3.9

Admittedly, these relative percentages are subject to a lot of criticism. They were calculated by lower mathematics, the lowest in fact, for equal benefit was given to each operation on the individual job, with one exception. However, they do show that at least six of the operations are real fuel savers, *if they are needed.*

Vacuum cleaning an already clean boiler won't save anything, nor will baffling a job with a 300° stack, but if there is a quarter inch of soot on the tubes and an 800° stack, savings will be real.

When three or four things are done to a job, the percentage savings in the table can be added, providing again that they were all needed. Adding from the table the savings for a new chamber, smaller nozzle, baffle and draft regulator totals 31.7%, while the two jobs in the study that had this identical work done showed savings of 32.8 and 46.5%, respectively (the Frank and Grant jobs described in the first article).

FUEL SAVINGS THROUGH RENOVATION

Owner, Location	Work done	Before CO_2	Before Stack	Before Draft	Before Eff.	After CO_2	After Stack	After Draft	After Eff.	Gain
1. Carton, Baldwin	Baffle	7%	650°	.04 .10	71%	8½%	600°	.025 .05	76%	7.1%
2. Leitz, Oyster Bay	Cleaning, Seal Boiler, New Chamber	7½	650	.00 .04	73	9½	550	.02 .05	79	8.2
3. Freeman, RockvCtr.	New Chamber, Baffle, Cleaning job	8	700	.06 .10	72	11	600	.02 .08	80	11.1
4. Mullany, Garden City	Baffle, Draft Regulator, Tank Jacket	7	650	.04 .12	71	9	475	.02 .08	81	14.1
5. Rucker, Baldwin	Baffle, New Chamber, Draft Regulator	5	900	.14	50	9	600	.02 .06	77	54.0
6. Gann, Freeport	Baffle, Nozzle, Cleaning, Draft Regulator	5	600	.06 .12	65	8	350	.02 .05	84	29.2
7. Wymbs, Freeport	New Chamber, Cleaning, Seal Boiler	2	800	.00 .04	25	8½	525	.03 .06	79	

		Oil Used 1940–41	Oil Used 1941–42	Adjusted Savings
8. Donald, Manhasset	Complete Cleaning	2510 gal.	2195 gal.	3.4%
9. Wyland, Great Neck	Complete Cleaning	2525	2135	6.5
10. Hammerstein, Val. Strm.	Baffle	2596	2261	3.9
11. Groves, Bellerose	Baffle, Cleaning, Draft Regulator, Water Treatment	1975	1550	13.3
12. Guth, Garden City	Baffle, Draft Regulator	2700	2200	9.2
13. Daw, Merrick	Burner Adjustment	2850	2300	10.8
14. Rodman, Great Neck	New Chamber, Baffle	Claims he saved 500 gallons		

Draft regulators *of the better type are credited with important fuel savings.*

heating plant is below 75%, he should lay out whatever is necessary to bring it safely above that point. The Frank and Grant jobs mentioned in the last paragraph each had efficiencies of only 58% before work was started; this was raised to 77 and 85%.

Rylander's men did not leave any of the jobs until CO_2 was 8% or above and stack temperature 600° or below. The average condition after completion was 9.3% CO_2 and 555° stack.

Fortunately not much critical material is needed in oilburner renovation work. The amount of iron and steel in one railroad tank car would renovate 10,000 oilburners, and the oil saved by those renovations would be more than the tank car could haul from the West in 16 years, including Sundays and Yom Kippur.

Eastward Oil Movement Grows

TANK CAR SHIPMENTS of oil to the East Coast bettered all previous records during the week ending Sept. 19, when a daily average of 856,710 barrels arrived. This compares with 838,440 in the week ending Sept. 12, and with 824,850 in the Sept. 5 week. Shipments in the August 29 week were 823,260 barrels daily average. Thus, each of the last four weeks has shown a gain over the previous one, yet they are still well below the 900,000 barrels daily average for the month expected by the Petroleum Industry War Council, as shown by their report in this issue.

The Office of Defense Transportation announced on September 15 that 8,400 additional tank cars have been released for Eastbound hauling as a result of the order restricting the use of cars in short runs. Effective October 10, it will not be possible to move oil in tank cars on runs of 200 miles or less, without special permission from ODT.

Also effective the same date is an ODT order prohibiting the use of small tank cars, under 7,000 gallons capacity, for hauling oil into District 1 from the West. By insuring that all Eastward trains are filled with large cars, a further increase in daily average movement is expected after that date.

The War Production Board on Sept. 24 issued a Certification of Necessity to ODT to set up priority regulations governing the use of tank cars. While petroleum products in general are rated below some other essentials, it is interesting to note that fueloil ranks above gasoline.

The WPB order directs ODT to schedule priorities for the use of tank cars in the following order:

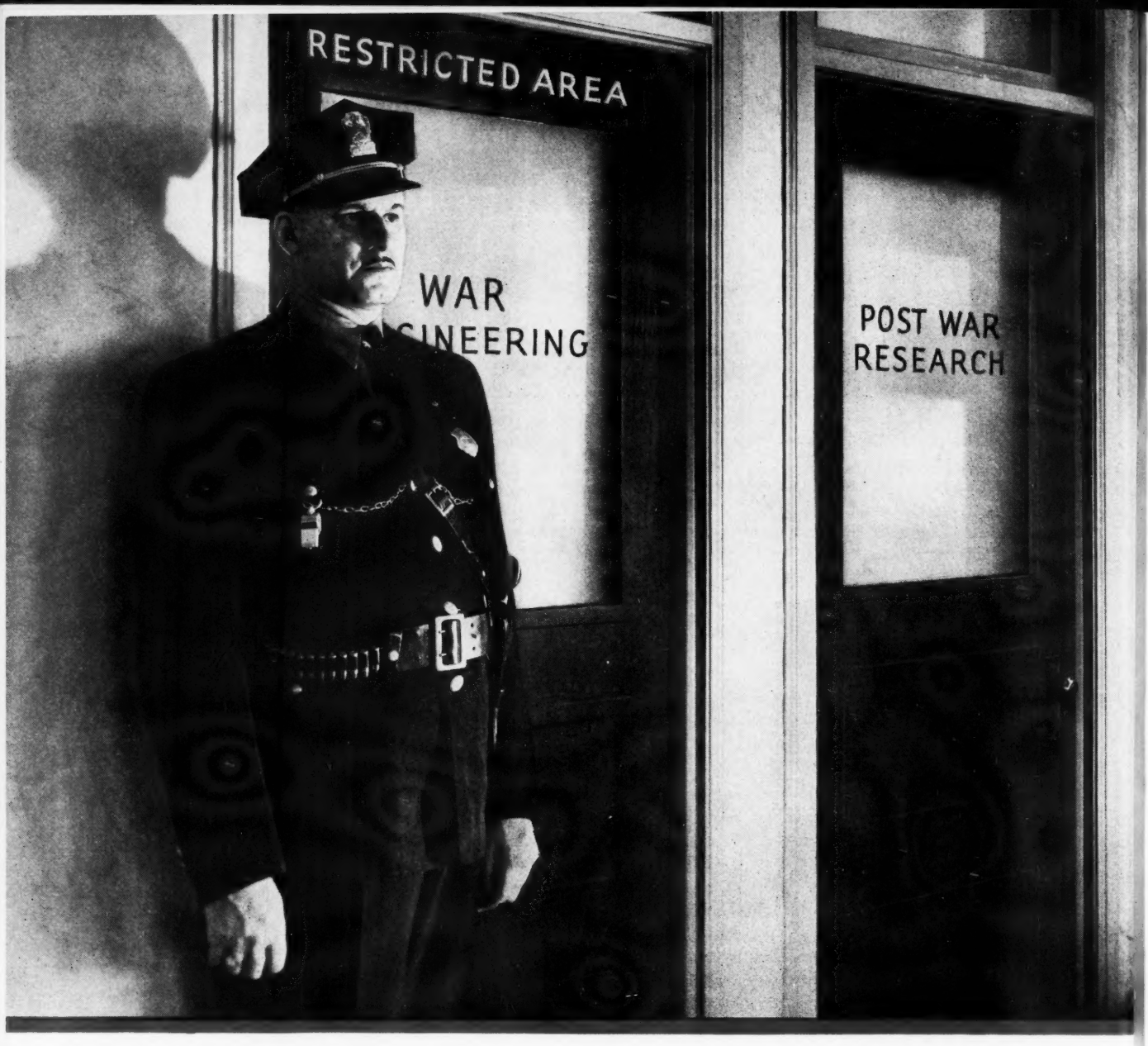
"A" rating—for the transportation of any material for the Army, Navy, Maritime Commission, the War Shipping Administration or for Lend-Lease shipment.

"B" rating—for shipment of commodities included in a WPB list of approximately 390 chemicals, foods, edible and non-edible fats and oils, and other miscellaneous products.

"C" rating—for the transportation of petroleum and petroleum products into District 1 (as defined by the Office of Petroleum Coordinator for War) and into or within the States of Oregon and Washington. The size of such shipments will be determined by the Office of Petroleum Coordinator for War, subject to the review of the Director General for Operations of the WPB.

"D" rating—for shipment of petroleum and petroleum products, other than automotive gasoline, within District 1 and into or within Districts 2, 3, 4 and 5 (as defined by OPC), except the States of Oregon and Washington. The kind and size of these shipments will also be di-

(*Continued on page 32*)



THREE SHIFTS

★ ★

ARMY E NAVY

For Outstanding Achievement in War Production, the Minneapolis and Wabash plants of Minneapolis-Honeywell have been awarded the Army-Navy "E"

HIGHLY SPECIALIZED materiel of war, for combat. Controls for military and defense housing and essential war industry. Around the clock, Minneapolis-Honeywell and its subsidiary, The Brown Instrument Company of Philadelphia, are turning out these vital instruments. Along with their manufacture goes constant research to improve their quality, their accuracy, their ability "to deliver." Side by side with these developments goes research on controls for peace! Controls for heating and air conditioning and industry, which in the bright future, when this epic struggle is won, will inaugurate a new standard for comfort and efficiency in the United States and throughout the world. When you get ready to plan your new home, apartment or industrial building, delegate your control problems to M-H and Brown Engineers ... Minneapolis-Honeywell Regulator Co., 2721 Fourth Ave. S., Minneapolis, Minn. In Canada: Toronto. In Europe: London, England and Stockholm, Sweden. ★

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Regulator Company

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Correctly designed and durably built Brodie Meters, like other dependable precision devices, might occasionally require some slight attention--some minor adjustment. Small trifles overlooked today may result in serious damage later. To keep stock transfers and deliveries accurately efficient—to continue serving the needs of your customers, your community and your country, keep your meters in tip-top condition. They'll continue to give you the service you desire, when you've given them the service they might require. Simplified Brodie Meter construction makes this feasible. Write today for Model X Service Manual—No. 190.

PETROLEUM METERING EXCLUSIVELY

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SINCE 1927

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

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fuel oil e oil heat

Delivery Costs Up

Ration Periods May Increase Truck Mileage a Third

By
Carl A. Goddard*

This story is written to illustrate the one point that, no matter what actual ration cut or what exact period dates of season division may be finally decided upon, a very serious delivery problem will be encountered because of this seasonal period division and "limited" period coupon borrowing.

THE local retail fuel oil dealer! Is he going to boss his customers or are his customers going to boss him? That's an important question. By the time this appears in print perhaps it is a question that will have been answered. Then, again, perhaps it will still be hanging fire pending the issuance of certain Governmental regulations.

If the modern methods of a completely automatic fuel oil delivery system are to be used to save tires, trucks, time and men, then it is most necessary that the fuel oil dealer have the upper hand in his dealings with those to whom he delivers. Why? Simply because you can't run anything unless you're the boss. Properly running an automatic delivery system entails the consumer accepting the oil you want to deliver, in the quantity you wish, at the time you deem best. To do that you've got to be able to talk turkey to your consumer and not have him running you ragged by making unreasonable demands.

It might be thought that a strong minded organization with the proper sales slant could easily bring their consumers to the desired viewpoint. This is largely true—and is just what was done in past years by many progressive oil companies.

It may also be thought that the green light for mileage saving delivery methods has been given to all truckers by O.D.T. Certainly O.D.T. has lent its weight to streamlined transportation. It is also undoubtedly true that O.D.T. is going to specifically demand mileage saving delivery in one form or another from the retail fuel oil delivery dealers.

*Scully Signal Co.

Why, then, haven't more dealers made definite moves to place themselves in "boss man" position in respect to their customers?

The answer lies in supply uncertainty to some extent. Even more so it lies in the orders issued by Government departments that were deemed necessary because of supply. Phases of these orders have seriously hampered delivery methods, the tire and truck saving so desired by O.D.T., and the time and man saving desired by W.M.C. That the fuel oil dealer is desirous of all these savings goes without question.

The fuel oil dealer knows pretty well what the effects of past regulations have been. Let's see what effects future regulations may hold. For instance—

What effect will O.P.A. rationing and the division of the delivery season into 5 parts have upon efficient automatic oil delivery?

Make a Chart

In answer to that one, let's get a "Delivery Graph" drawn according to what the newspapers tell us the new O.P.A. rationing plan will be. (We'll forget the grape vine rumors). Naturally the "Delivery Graph" will vary according to customer seasonal usage and locality. But with those two points settled, plus newspaper rationing releases, we can draw an imaginary delivery situation for discussion purposes. While it would vary in actual practice, according to weather variation, it discloses the dangers and pitfalls that heating season 5 part division will visit upon the Degree Day system.

We will take a fuel oil user, Mr. Jones, who under rationing judgment should use 2,250 gallons in a normal year. He then is cut a third by rationing and is given coupons for 1,500 gallons.

He is an informed public minded citizen. He goes to his oil company, gives them his coupons, gets a receipt for them and says, "I know you've got to save your trucks, tires and equipment. You can deliver oil any way you want to do it, day or night, whether we are home or not. My tank has got one of those ventalarm whistles on it. Deliver whatever quantity seems best to you. I'll send you my check the day after I get your invoice."

The oil dealer says, "That's fine, Mr. Jones. If all our customers would tell us that, we could do a real job of cutting down mileage, handle our customers better and make our trucks and tires last longer. That is not only what we want to do but is also what O.D.T.,—you know Office of Defense Transportation,—is asking us to do. Thanks a lot for your swell cooperation! That'll mean a minimum number of trips to your house!"

Great! A dealer and a consumer have gotten together to share in the national drive to conserve tire and truck use. The dealer fells so good thinking of getting together with his other customers that he goes out and buys himself a 5¢ cigar.

Now, we don't like to throw cold water. On the other hand, we believe that a little cold water right here would be a good thing. It might wake somebody up!

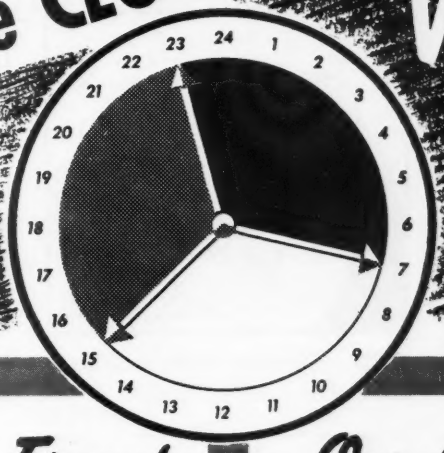
Let's look at Mr. Jones' account more closely. Let's plot a delivery graph according to what we know about his account. He gets 1,500 gallons for the season, has a 275 gallon inside tank, lives in a territory that normally has 6,000 Degree Days.

Well, that's a cinch! This year a gallon of fuel oil has got to carry him 4 Degree Days. We'll space our deliveries at 200 gallons a drop so that we'll take care of him in 8 trips anyway, or with a little finer figuring pick up the other hundred gallons over the season and do it in 7 trips. Why sure! We got in an extra big drop when we filled his tank September 30th. Seven deliveries it will be! Including the delivery of Sept. 30th, only seven deliveries!

Wait a minute! We've forgotten something. The delivery season has been divided into 5 periods. For illustrative purposes so that we may follow through with definite figures, let's say that period No. 1 is Sept., Oct. and Nov., with 1140 degree days; period No. 2 is Dec. with 960

(*Continued on page* 52)

WORKING AROUND the CLOCK TO GIVE – WINGS to VICTORY



On the Home Front

Providing "Stitch in Time" Heating Service through the Authorized DELCO-HEAT *Minute Man* Dealer Organization

Conservation of the nation's health and resources is vitally important if this nation is to achieve Victory without delay. To this end Delco Appliance, through its authorized Delco-Heat *Minute Man* dealer organization, offers home owners a valuable *"Stitch in Time"* heating service. This service is designed to prevent material-wasting breakdowns, and by increasing heating plant efficiency to reduce fuel waste. In addition, it helps assure the home owner health-preserving heat.

With this patriotic service, the *Minute Man* Delco-Heat dealer fulfills his obligations to his owners and is able to stay in business profitably for the duration.

On the War Front

Providing vital ELECTRO-MECHANICAL EQUIPMENT for all branches of the service in every theatre of war

To help win this mechanized war, every production minute and all of our facilities for precision manufacture, are being devoted to the fabrication of material for our armed forces.

Delco Appliance has always been proud of the close tolerances to which many of its Delco-Heat parts have been made. Today, at Delco Appliance, equipment for our fighting men is being built to precision tolerances far more exact than ever before. Modern 6-operation lathes turn to almost unbelievable limits of precision. Surface finishing is done to less than ten millionths of an inch smoothness.

When the war is over, Delco Appliance will once more return to the manufacture of fine appliances for the home—but until then, "Victory is Our Business."

DELCO APPLIANCE

DURING WAR OR PEACE DELCO APPLIANCE "DOES THE JOB BETTER"

DIVISION OF GENERAL MOTORS CORP., ROCHESTER, N. Y.

ONE FUEL COMPANY'S ADVERTISING IN THE CLASSIFIED DIRECTORY ATTRACTS MANY PROSPECTS

☐ *This man wants OIL BURNER PARTS*

☐ *This man wants to buy KEROSENE*

☐ *This man wants his OIL BURNER REPAIRED*

☐ *This man wants to BUY FUEL OIL*

☐ *This man wants to buy RANGE PARTS*

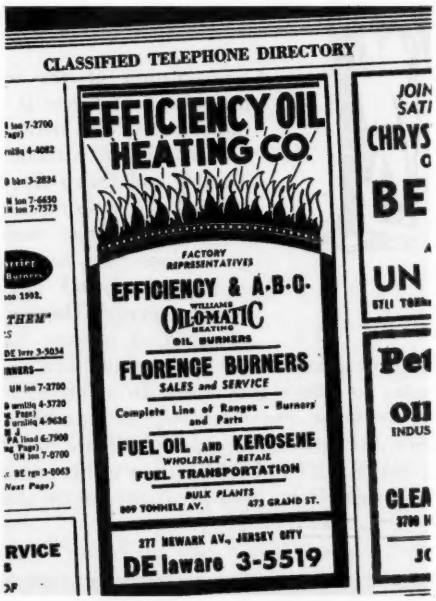
☐ *This man wants to buy WHOLESALE FUEL OIL*

Check how many would be prospects for you

"You get out of it what you put into it," reasons the Efficiency Oil Heating Co. That's why they give so much point-of-sale information in their Classified Telephone Directory advertising.

Many concerns, too, arrange for advertising under those headings in the Classified where prospects would be likely to look for a given product, such as: "Air Conditioning."

A Directory Representative can advise you how to plan your advertising to attract more business. Reach him by calling the telephone company business office.


CLASSIFIED TELEPHONE DIRECTORY

EFFICIENCY OIL HEATING CO.

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WILLIAMS OILOMATIC HEATING OIL BURNERS
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Supply Forecast

Petroleum Industry War Council Sees Situation Tight

With rationing of fueloil just ahead, with conversion-versus-conservation the hottest topic in oilheating circles the past month, the one elusive factor in all calculations is fueloil supply—what, when and where. It's safe to say that at least a dozen groups of important men, within and without Government circles, are searching out the answer, or the most convincing estimate. It's reasonable to suspect that the Petroleum Industry War Council, a quasi-governmental group composed of the bigwigs in petroleum production, refining and marketing, is in good position to know. Whatever conclusions are reached, it's up to its members to deliver.

Bi-monthly Report

Their latest report, just issued, constitutes the most useful compilation of the month. Their next revision is expected in November. PIWC is understandably conservative; theirs will be the headaches if they go out on a limb of too optimistic promises. The text that follows is direct quotation, lifted here and there, from the 14-page September report: (Note: When Districts are mentioned by number: District 1 is 17 Eastern States; District 2 is 15 Midwestern States; District 3 is 6 Southern States).

The report forecasts the supply and demand situation for the three districts for the period August, 1942, to March, 1943, inclusive, and is focused upon the critical problem of supplying the peak demand for fueloils in District 1 during the coming winter.

Developments since the last report (July): Total stocks of crude and refined products in District 1 have increased 6,600,000 barrels; this has been only about 75% of the increase projected at that time as needed to provide the required minimum accumulation of distillate and residual fueloil stocks.

The need for the most effective utilization applies not only to transportation, but also to the other functions of the industry, particularly in the operation of refineries, where the available operating flexibility will have to be utilized to the utmost in order to maximize the yields of fueloils.

The realization of this program will necessitate prompt action on the following:

(a) Maximum utilization of all available transportation facilities; in particular to realize the estimates of tank car deliveries. To take care of the increase forecast in barge deliveries on the Ohio River, adequate additional barge unloading, storage and tank car loading facilities must be provided.

(b) A marked readjustment in refinery yields to increase distillate and residual fueloil production at the expense of gasoline. To avoid hardship on refiners, which would jeopardize the program, prompt action on the necessary compensation is essential.

(c) The control of the use of all petroleum products in District 1, so as not to exceed the available supplies of each. It is particularly important that gasoline consumption be held down to the amount estimated. Failure to do this will mean the use, for gasoline, of transportation facilities that should be used to build up needed stocks of fueloils in anticipation of winter demands.

District 1

The effect of the program on consumption differs between the three districts, and is of course most serious in District 1. In Districts 2 and 3 no artificial restrictions on consumption are assumed other than the effect of voluntary curtailment brought about by the scarcity of rubber and other factors. Gasoline demand within District 2 is estimated to decrease so that local consumption in December, 1942, will be 25% lower than it was in December, 1941.

To distillate fueloils used for heating purposes in homes and elsewhere, a reduction of about 30% from normal demand has been applied as realizable through the conversion to coal of 10% of the burners now in use, and through such economies as lowering of temperature, improving burner efficiency and home insulation, and shutting off rooms. To distillate fueloils for non-heating purposes, was applied an estimated reduction of about 5% of normal demand. The net expected saving in the use of distillate fuels for all purposes is about 25%.

The kerosene and range oil restrictions are on practically the same basis as those applied to distillate fuels, an estimated reduction of 25% from normal demand.

Essential demand in residual fueloils corresponds to the estimate of actual consumption. Due to anticipated conversions and reduction in ships' bunkering requirements it is anticipated that this demand will be about 20% below normal requirements, despite the fact that industrial installations, where conversion is impractical, are expected to increase their consumption.

Delivery Estimate Reduced

Total deliveries into District 1 are lower than those previously forecast due to lower assumed tanker movements. In view of this it is imperative that the higher estimates of tank car deliveries be realized. The estimates used of improved tank car turnaround, which allow for the slow-up effect of heavier traffic and winter conditions, depend for their realization upon an increase in the proportion of supplies moving in trainload lots. This movement will require a high degree of industry cooperation in the joint use of loading and terminal unloading facilities, particularly the latter. The necessary steps to realize these turnarounds must be taken promptly if tank car deliveries are to reach the level of 970,000 barrels daily for the month of September.

Deliveries of crude and refined products by pipeline include the anticipated shipments through all the projects scheduled. The Defense Pipeline is estimated to start delivering 150,000 barrels daily to points in southern Illinois on January 1st, and to increase these deliveries to

DISTRICT NO. 1

Summary of Estimated Supply and Demand Program
August 1942—March 1943

Thousands of Barrels Daily

	Aug.	Sept.	Oct.	Nov.	Dec.	First Quarter 1943	Average 8 Months Ending 3/31/43
New Supplies							
Production in Dist. 1,							
Crude Oil	77	78	80	80	80	80	79
Natural Gasoline	6	6	7	9	9	9	8
Receipts into Dist. 1 by:							
Tank Car	850	970	895	890	860	932	908
Pipeline—crude	85	90	90	85	95	95	90
—products	56	62	63	63	57	91	70
Great Lakes Barge & Tanker	65	80	75	35	..	..	32
Barge—Miss./Ohio	29	31	36	54	60	88	59
—to Florida	37	30	32	58	78	81	60
Assumed tanker	150	125	100	100	100	..	76
Total Dist. 1 Receipts	1272	1388	1291	1285	1250	1287	1295
Memo: Dist. from which final shipment into Dist. 1 is made:							
District II	(411	394	350	298	344	556	433)
District III	(831	964	926	972	891	731	845)
Foreign	(30	30	15	15	15	..	17)
Total	(1272	1388	1291	1285	1250	1287	1295)
Total Supply	1355	1472	1378	1379	1339	1376	1382
Demand Which Can Be Met From Est. Supplies							
Gasoline—essential	407	407	406	405	402	409	407
—other supplied	53	43	39	30	28	11	28
Kerosene—essential	66	80	92	112	137	115	104
—other supplied	..	4	5	6	8	6	5
Distillate—essential	126	140	166	285	349	328	256
—other supplied	..	9	12	21	26	24	18
Residual fuel—essential	302	344	386	396	448	469	410
Lubricants—essential	54	47	46	48	45	49	48
Asph. & Road Oil—essential	31	30	28	22	14	16	22
Other—essential	62	66	68	68	68	69	67
Total Demand—essential	1048	1114	1192	1336	1463	1456	1315
—other supplied	53	56	56	57	62	41	51
Total Dist. 1 Demand scheduled to be supplied	1101	1170	1248	1393	1525	1497	1367
Deliveries to other dists. (chiefly lube)	18	18	18	18	18	18	18
Total	1119	1188	1266	1411	1543	1515	1385
Inventories							
Change—thous. B/D	+236	+284	+112	—37	—204	—139	— 3

300,000 barrels daily by March 1st. The net effect will be to increase deliveries to the East Coast by about one-third of the deliveries to Illinois, since tank car and barge facilities are still the bottleneck and the distance for such movement is still about 60% of what it was. During this period the line is assumed to operate about 40% on heating oils and 60% on crude.

In the forecast program full advantage has not been taken of the possibilities of eastward and southward pipeline movement from the Buffalo area by reversal and modification of existing facilities. One of the reasons has been the lack of assurance of adequate supplies at Buffalo to warrant the necessary pipeline changes.

The estimates of barge and Great Lakes tanker deliveries take into account the effect of new steel construction, conversion of steel cargo barges and the building of wooden barges for fueloil movement. Additional barge unloading and tank car loading facilities are necessary in the Pittsburgh area to handle the anticipated increased barge deliveries up the Ohio River, which are expected by January 1 to be three times the present volume.

Refinery runs and yields show the marked adjustments that will have to be made to increase fueloil supplies at the expense of gasoline. These are shown in percentages in the lower table.

	ACTUAL			FORECAST
Yield on Crude—%	*Year 1941*	*June 1941*	*June 1942*	*Average August 1942-March 1943*
Gasoline	46.0	46.6	39.9	37.1
Kerosene	6.0	5.2	5.6	5.8
Distillate Fueloil	13.6	12.7	15.4	16.3
Residual Fueloil	21.2	21.0	22.8	26.4
Refinery Runs—Barrels/Day	3,190,000	3,143,000	2,779,000	3,035,000

These adjustments mean that, to accomplish the average yields forecast, about 270,000 barrels daily of gasoline must in effect be degraded to lower valued products, as compared for the average operations for the year 1941; this means a reduction in refinery income of approximately $350,000 a day, which would be offset only in small part by reduction in operating costs. This will bring severe hardship to refiners unless the directives for the required yield changes are accompanied by prompt action to compensate for them.

◈

Eastern Movement Grows

(*Continued from page 24*)

rected by the OPC, subject to review by the Director General for Operations of WPB.

"E" rating—for the transportation of automotive gasoline within District 1 and into or within Districts 2, 3, 4 and 5, subject to the same direction and review as the preceding ratings.

Heavy tank car petroleum shipments are threatening to impede the movement of seasonal and highly essential vegetable oils, fats and other products. By granting a high priority rating to these products, it will be possible for ODT, at the direction of WPB, to divert tank cars from the carrying of petroleum products and to assure in advance the fair distribution of all commodities vital to the war program which can only be transported by tank car.

Petroleum Coordinator for War, Harold L. Ickes announced that laying of the Government-owned, Carabelle-to-Jacksonville trans-Florida pipe line is scheduled to be completed by Dec. 15.

At that time, the line will commence delivery of 35,000 barrels of petroleum products daily to Jacksonville, from where it will be distributed by barge to consuming centers along the route of the Atlantic intracoastal waterway as far north as Virginia.

"If . . . poor oil burner efficiency makes it impossible to maintain the 65 degree temperature with the amount of oil, the householder is expected to cut down the heat loss rather than burn more fuel."

—LEON HENDERSON

Your Obligation and Opportunity Lie Here

The rationing of fuel oil is no longer confined to the Eastern seaboard. It is now to be extended to cover the area of thirty states.

For some time past we have been advising you to prepare for just this situation.

This rationing is a necessary wartime hardship on those of our people who heat their homes with oil. Yet it is your opportunity to meet an obligation which you owe to them and to your country.

Meeting this obligation is not only the patriotic thing for you to do, but a matter of self-interest. These people originally bought their oil burning equipment from you. They now must rely on you to get the utmost out of that heating equipment.

And they are willing to pay you for it.

The statement quoted above clearly indicates that the men who are responsible for rationing are thoroughly familiar with the fact that improving the efficiency of a burner will help the home owner.

This situation gives you the opportunity to help these people and provides you with an immediate income. And the resulting good will that accrues to you now will bring you a substantial business advantage in the days to come.

The Webster Electric Service Stations listed here are prepared to assist you with parts as well as complete transformers and fuel units.

WEBSTER ELECTRIC COMPANY, Racine, Wisconsin, U. S. A. • Established 1909.
Export Dept.: 100 Varick St., New York City. • Cable Address: "ARLAB" New York City

WEBSTER ELECTRIC SERVICE STATIONS AND SALES REPRESENTATIVES

Ignition Transformers, Fuel Units, and Parts

California, Los Angeles	Garland-Affolter Engr. Corporation	124 W. 4th Street	Sales Representative
California, San Francisco	Garland-Affolter Engr. Corporation	Rialto Building	Sales Representative
Connecticut, West Hartford	Bell Pump Service Company	100 Park Road	Service Station
Illinois, Chicago	Braun Bros. Heating Supply Company	3146 W. Chicago Avenue	Service Station
Illinois, Winnetka	Braun Bros. Heating Supply Company	812 Oak Street	Service Station
Iowa, Des Moines	Delavan Engineering Company	414—12th Street	Sales Representative
Maryland, Baltimore	R. E. Michel Company	1011 Greenmount Avenue	Service Station
Massachusetts, Cambridge	Cronin Supply Company	60 Broadway	Service Station
Massachusetts, Malden	E. L. Kimball	25 Lynde Street	Service Station
Massachusetts, Waltham	Cronin Supply Company	157 High Street	Service Station
Massachusetts, Wollaston	W. S. Plummer	109 Lincoln Avenue	Service Station
Michigan, Detroit	Wm. G. Boales Company	6429 Hamilton Avenue	Service Station
Minnesota, St. Paul	Thermal Company, Inc.	2448 University Avenue	Service Station
Missouri, St. Louis	Brass & Copper Sales Company	2817 Laclede Avenue	Service Station
New Jersey, Elizabeth	Certified Fuel Unit Service Company	600 Spring Street	Service Station
New York, Albany	Certified Fuel Unit Service Company	1018 Central Avenue	Service Station
New York, Brooklyn	Eveready Specialties Company	1724 Flatbush Avenue	Service Station
New York, Brooklyn	The Capson Company	106 Rogers Avenue	Service Station
New York, Jamaica	Sid Harvey, Incorporated	138-76 Queen Boulevard	Service Station
New York, Valley Stream	Sid Harvey, Incorporated	104 E. Mineola Avenue	Service Station
Oregon, Portland	Garland-Affolter Engr. Corporation	1233 N. W. 12th Avenue	Sales Representative
Pennsylvania, Philadelphia	Certified Fuel Unit Service Company	3412-14 W. Allegheny Ave.	Service Station
Rhode Island, Providence	Providence Plumbing Supply Company	47 Pine Street	Service Station
Washington, Seattle	Garland-Affolter Engr. Corporation	532 First Avenue South	Sales Representative

WEBSTER ELECTRIC

"Where Quality is a Responsibility and Fair Dealing an Obligation"

fuelail & oil heat

Readers' Forum

OFFICE OF PRICE ADMINISTRATION
Washington, D. C.

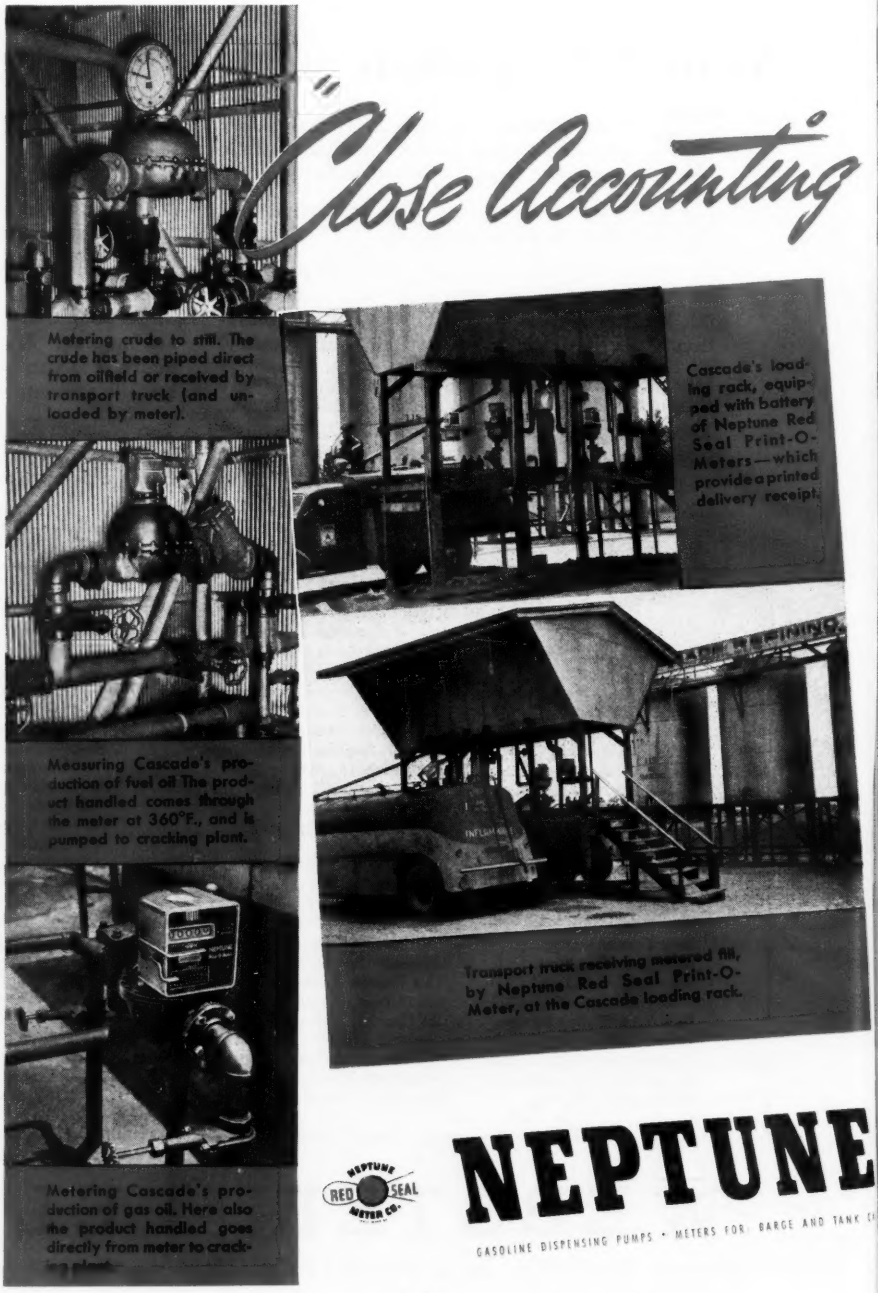
Gentlemen:

We note with considerable gratification that the article "Users Must Save Oil," prepared by the Office of Price Administration and appearing in the August issue of your magazine, apparently is effective in causing the conservation of important amounts of heating oil.

Field check-ups show that equipment manufacturers, oil companies, and service organizations are making direct efforts to put to use the oil conservation steps listed in the article. As an example of a report on the activities of just one service company, we can cite the following. By telling the owner of a summer-winter water heating layout to turn on the burner main switch for only two one-half hour periods each day, instead of leaving the switch turned on all the time, one service man is saving 38 gallons of oil per month in a home where about 63 gallons per month have been used up to now for heating water in summer. Repeated in thousands of homes, this conservation step will go far in helping to provide additional oil for heating homes during the severely cold days ahead. Significantly, this step is just one of many which service men can cause home owners to take to save oil.

Still concentrating attention on summer-winter layouts equipped with indirect water heaters and hot water tanks, which are exceedingly numerous in the oil shortage areas, there is an additional idea which service men should strive to have home owners use. On days when heat is first needed and when heating the radiators briefly mornings and evenings is sufficient, the burners should be kept idle during the times when heat for the radiators is not needed, instead of being permitted to start and stop all day and all night in accordance with the dictates of a hot water temperature control located on the boiler. This will accomplish sizable fuel savings. The service man can arrange to have the home owner turn off the oil burner main switch except when the burner must operate (for perhaps a half hour or silghtly longer each morning and the same length of time each evening) to provide heat from the radiators; or, the service man can lower the setting of the hot water temperature control on the boiler, which normally starts and stops the burner to keep the boiler hot for water heating, so far that the burner will operate only when the room thermostat circuit is closed. The owner would then be instructed to start and stop the burner by the room thermostat, to take heat mornings and evenings on mildly cold days, and to keep it idle at all other times. Of course, special arrangements must be worked out by service men to match the characteristics of forced-circulation hot water plants, for as given above the instructions apply mainly to steam plants. This emphasizes a point made in the article "Users Must Save Oil," to the effect that the help and advice of oil heating experts is necessary for home owners bent on making use of every step which can be taken to conserve oil.

We believe you have done an extremely creditable piece of work in presenting this article to the trade and in driving home the idea that the *application* of save-oil ideas is needed to save oil, and that oil burner service men, equipment


"Close Accounting
Metering crude to still. The crude has been piped direct from oilfield or received by transport truck (and unloaded by meter).
Cascade's loading rack, equipped with battery of Neptune Red Seal Print-O-Meters—which provide a printed delivery receipt.
Measuring Cascade's production of fuel oil The product handled comes through the meter at 360°F., and is pumped to cracking plant.
Transport truck receiving metered fill, by Neptune Red Seal Print-O-Meter, at the Cascade loading rack.
Metering Cascade's production of gas oil. Here also the product handled goes directly from meter to cracking plant.
NEPTUNE
RED SEAL METER CO.
GASOLINE DISPENSING PUMPS • METERS FOR BARGE AND TANK

dealers, and fuel oil experts are in the best position to induce home owners to take the many special steps which should be taken to save oil. That this article will continue to do good is indicated by notes we have at hand showing that at least 20,000 copies of the article will be reprinted by different manufacturers, oil companies, and service organizations for service men and home owners.

W. S. MACLEOD,
Chief, Technical Operations,
Standards Division.

WILLIAMS OIL-O-MATIC HEATING CORP.
Bloomington, Ill.

Dear Sir:

I thought you would be interested to see what we are doing to continue our micrometer story, in the enclosed copy of "*Newsweek*" for Sept. 21.

Previously we had emphasized the part played by smaller companies rather than the industrial giants. In this we recognize that large or small scale American precision production—line production—mass production is the greatest of all weapons, be it for peace or for war.

There is only one difficulty with this great implement in either peace or war. Like any huge body it is naturally slower in getting under way, but once moving becomes an irresistible force. That is why we are not dismayed when we hear on all sides the cry "The United Nations are losing this war." We will win because we have never bowed to the impossible.

There is one salient point to remember as we consider these facts. Because of the very massiveness of our production, there is bound to be a lag in our returning to peacetime direction.

Now, far in advance of that return which we know is inevitable, we must keep in the back of our minds—far enough back to prevent its keeping one whit of force from the war effort—the thought that transition to normal production will require reserves which must be built up today. We must also be prepared to play our part in winning the peace.

It is great to be an American—it is great to be a part of American industry. We have so much to be proud of.

W. A. MATHESON,
Vice President.

for all Our Products!"

Executives of the oil company here quoted, placed their plant production and sales under METERED CONTROL. That was over two years ago. Their experience, now reported, is worth your thoughtful analysis.

CASCADE REFINING CO., Salem, Illinois, determined upon metering its refinery and bulk storage plant throughout. Some two years later, each meter had handled from 1,000,000 to 13,000,000 gallons of the plant's products—gasoline, kerosene, distillates, fuel oil—for a total daily plant average of 103,000 gallons metered. This thorough-going test, demonstrated that . . .

"Metering provides a very satisfactory way of measuring production and making accurate deliveries."

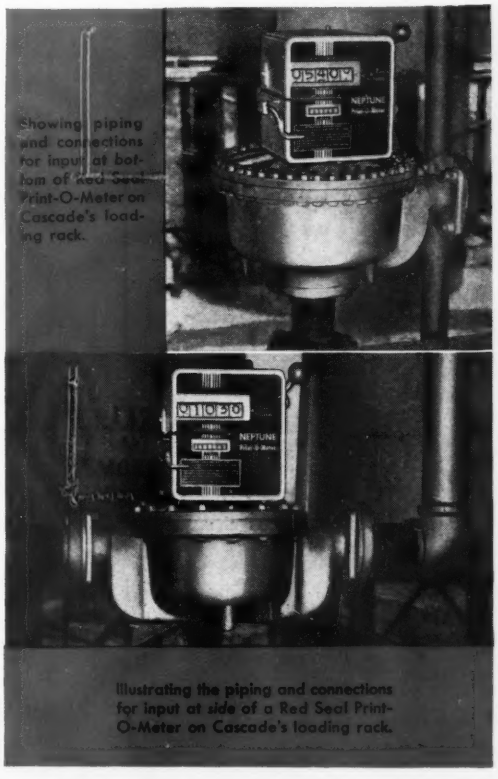
"It results in a close accounting for all products . . . trouble-free service . . . low maintenance . . . and all customers perfectly satisfied."

All Leaks and Losses Exposed

Consider fully what this "close accounting for all products" has meant to Cascade. (a) Many millions of gallons have been accurately accounted for. (b) No hidden leaks or losses in receivals, processing, storage, or withdrawals have escaped being spotted by the meters. (c) Metered truck fills have won the complete confidence of customers, and have afforded a final check on sales and inventory (d) A perpetual audit, by *Metered Control*, covering all the plant operations!

Here's a common-sense suggestion:

Study exactly how your own metering equipment can be applied to *Metered Control* of your plant operations, in as high a degree of effectiveness as possible. By pursuing this method, a number of oil companies actually have salvaged profits out of expected deficits. Others have increased normal earnings. Your nearest Neptune representative will be glad to offer recommendations.



Showing piping and connections for input at bottom of Red Seal Print-O-Meter on Cascade's loading rack.

Illustrating the piping and connections for input at side of a Red Seal Print-O-Meter on Cascade's loading rack.

RED SEAL METERS

UNLOADINGS • STORAGE TRANSFERS • LOADING RACKS • DELIVERY TANK TRUCKS

OIL IS AMMUNITION
USE IT WISELY!

NEPTUNE METER COMPANY

Main Office: 50 West 50th Street, New York. Branch Offices at Atlanta, Boston, Chicago, Dallas, Denver, Kansas City (Mo.), Los Angeles, Louisville, Philadelphia, Portland (Ore.), San Francisco ,and Long Branch, Ont. ,Canada.

A1919

Committee to Advise On Water Heaters

AN INDUSTRY advisory committee has been named to work with the Plumbing and Heating Branch of WPB on water heater problems. Industry members of the committee are:

J. J. Cheviron, President, Lochinvar & Michigan Tank & Furnace Corp., Detroit, Mich.; M. H. Feldman, Vice President, John Wood Mfg. Co., Conshohocken, Pa.; Earl Gossett, President, Bell and Gossett Co., Morton Grove, Ill.; George L. Harberger, Eastern Foundry Co., Boyerstown, Pa.; R. E. James, General Manager, Rheem Mfg. Co., Sparrows Point, Md.; C. C. Lanman, President, Novelty Steam Boiler Works Co., Baltimore, Md.; L. R. Mendelson, President, Hotstream Heater Co., Cleveland, Ohio; M. D. Rose, American Radiator & Standard Sanitary Corp., Pittsburgh, Pa.; Thomas Starke, President, Richmond Engineering Co., Richmond, Va.; A. H. Sutton, President, Mission Water Heater Co., Los Angeles, Calif.;

Last Month--

GRATE SUPPLIES are adequate to meet the demand for conversions from oil to coal, Henry S. Norris of WPB says. Many supply houses report inability to buy grates, or bolts, cotter pins and other accessories necessary to installation. WPB has allocated the metal.

HOLC notified Coordinator Ickes on September 14 that it was converting 2000 oilfired homes out of the 30,000 homes now owned by HOLC. The remainder already use coal, with few exceptions. The agency has no jurisdiction over 800,000 borrowers in the country, and any decision on conversion of those homes to coal is up to the owners.

SCARE TACTICS similar to those used in the East during the summer now are being applied to oilburner users in the rationed Middlewestern States. The goal is to convert 25 million barrels of heavy oil and 2 million barrels of light oil demand to coal. Deputy Coordinator Davies has written to Frank Phillips, Chairman of District 2, and 117 primary suppliers in the district, saying that "unless fueloil conversions in District 2 are made without delay, the supplies in that area will not be adequate."

NEWSPAPERS carried dispatches out of Washington at the height of the rationing discussion, saying that the shortage of fueloil in the East may disappear before the end of the winter. "A well-informed source" said an increase of 300,000 barrels a day was in sight by the adoption of plans now under consideration.

WALTER L. FLEISHER of the ASHVE War Service Committee attacked the announced rationing plan as too complicated and unfair. Instead he recommended a flat percentage cut on the basis of past consumption. He did not explain how this would improve the equity of rationing.

NEW YORK DAILY NEWS explained the rationing plan with a headline, "Want More Fuel Oil? Consult Conscience."

OPA made a special amendment to its maximum rent regulations late in September which makes it possible for landlord and tenant to share the cost of converting an oilfired heating plant to coal. Under this ruling the tenant may pay some amount in excess of his maximum rent to cover a share of the conversion cost, though OPA points out that he is under no obligation to do so.

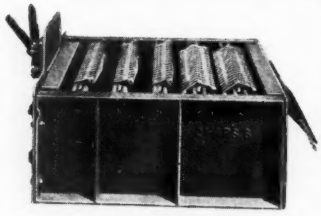
DEPUTY ADMINISTRATOR Paul M. O'Leary of OPA made it known on September 20 that apartment houses and other commercial buildings burning oil in heating plants that could be converted to coal, may be denied oil completely. Owners will be required to report on their convertibility when they register for oil ration.

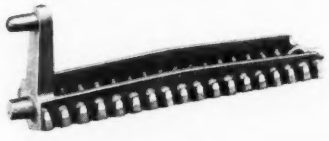
CORDWOOD PRICES in Oregon, Washington and the six New England States were made subject to rise at the discretion of the State OPA offices in each state. Firewood is becoming scarce in these states, due to labor migrations into other lines of work, and because price ceilings made it impossible to produce the wood.

MAYOR LAGUARDIA of New York has appointed an Engineering Advisory Committee for Fuel Conservation to provide low-cost advice to homeowners on the

Hank sez—

he can save you 20 to 25% on Grate Conversions





FUNNY thing how some of you good scouts buy grate trouble to save money. Resulting mostly in making trouble and losing money.

It just don't make sense, that a conversion grate can be "made to fit any boiler," without cutting and fitting. Besides which, when you get thru, you have paid more for the so called grates to start with, and cost more to put them in to end with.

You can get exact fitting grates for any Burnham Boiler, and use the oil burner as a blower and save 20 to 25 percent. You'll have a perfect fit job.

One that won't burn out soon as your back is turned either.

If you want a complete conversion equipment with shaking grates, door, etc., our Burnham folks will give you a special discount, which brings the price down to rock bottom.

Any way you figure it, in comparison with any grate outfit "made to fit any boiler"—*and don't*—you are way ahead of the game buying regular Burnham grates or full conversion equipment for Burnhams. Saying it all another way: Why buy a left leg, when you can get a right one for less money?

In any event, whatever you do for your customers, get to doing it *at once*. The oil shortage is sure as preaching.

HANK

BURNHAM BOILER CORPORATION

Member of Boiler and Radiator Institute

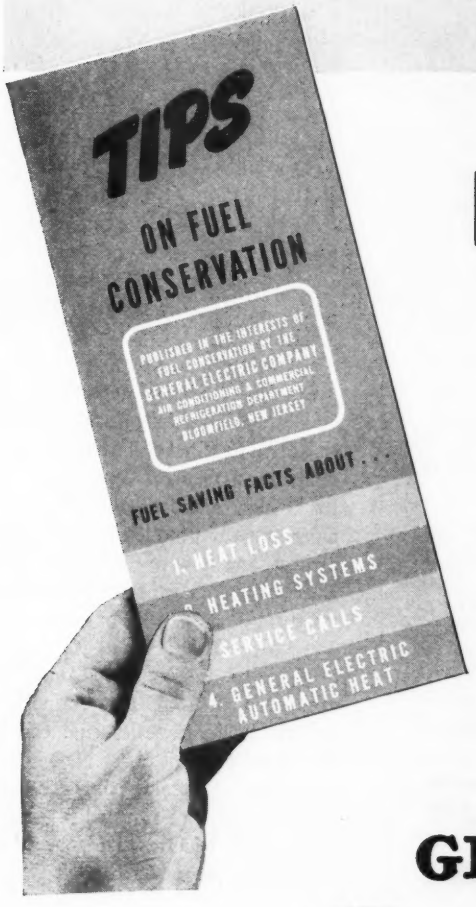
Irvington, N. Y., Dept. O Zanesville, Ohio, Dept. O

Branch Offices In All Principal Cities

Export Dept. 50 Church St., New York City

Burnham Boilers

"That G-E Dealer certainly helped us with our fuel problem"
"He sure did—And I'm glad he's going to service our furnace from now on"


TIPS
ON FUEL CONSERVATION
PUBLISHED IN THE INTERESTS OF FUEL CONSERVATION BY THE GENERAL ELECTRIC COMPANY AIR CONDITIONING & COMMERCIAL REFRIGERATION DEPARTMENT BLOOMFIELD, NEW JERSEY
FUEL SAVING FACTS ABOUT . . .
1. HEAT LOSS
2. HEATING SYSTEMS
3. SERVICE CALLS
4. GENERAL ELECTRIC AUTOMATIC HEAT

HERE'S THE BOOKLET

THAT HELPS G-E DEALERS AS WELL AS HOME OWNERS

Throughout the country—and especially in rationed areas—this timely booklet is helping G-E Dealers to do their part in the nation's fuel conservation program. It helps home owners make the most of limited fuel supplies. It helps G-E Dealers make contacts with many customers not now on their books. It helps them get more service agreements.

If you are a G-E Dealer and are not yet using this effective aid, write to your G-E Heating Distributor, or direct to us, for your sample copy.

"Tips on Fuel Conservation" is an easy-to-understand manual that aids home owners regardless of the type of furnace they own or the fuel they use. It is a part of General Electric's program to protect dealer good-will for post-war sales. General Electric Co., Heating Division 24811, Bloomfield, N. J.

GENERAL ELECTRIC

fueloil & oil heat

possibility of converting their oilfired heating plants to coal.

DOMESTIC COAL customers were asked by Luther Harr, Bituminous Coal Consumers Counsel, to avoid starting their furnaces for the winter until it becomes absolutely necessary. He pointed out that this will lessen the load on transportation facilities. September cool spells usually are followed by warmer weather when no heat is needed, he said.

SOLID FUEL Coordinator Ickes told coal dealers to stop deliveries to homeowners who have coal, and give their present supplies to those who have empty bins. Coal supplies in dealers' yards are too low to allow further stockpiling.

◈

Quiet May dealers met with C. R. Collins, general sales manager, and Kay Klotzman, vice-president, at New York, September 16, the discuss various mutual problems arising out of war conditions. After the formal meeting the 40 men in attendance adjourned to Leon & Eddy's night club to finish the discussions.

A Liberal Supply of These NEW 24-PAGE BOOKS

FREE

to *ALL* BURNER and FUELOIL DEALERS
for distribution to all fuel oil users in your community.

• • •

OIL IS AMMUNITION
HELP YOUR CUSTOMERS SAVE IT!

• • •

A COMPLETE MANUAL of burner, furnace and boiler care, plus many fuel-saving suggestions for HOME OWNERS (Your customers).

The Wayne names does not appear on the cover of this book—It is ALL YOURS.

• This is your opportunity to sell fuel-saving service and accessories—NOW.

WAYNE gives you these books, imprinted with your business name and copy, as their share in the nation-wide effort to save fuel oil, and maintain health and comfort in American homes during this war.
There is no charge or obligation. The offer is open to ALL OIL BURNER and FUEL OIL DEALERS. We ask only that you limit your request to the number of books that you will actually place in the hands of oil burner owners.
WILL YOU COOPERATE? Requests are being filled in the order received. ACT NOW to avoid delay. Write for your books today. Please use your business letterhead.

WAYNE OIL BURNER COMPANY
FORT WAYNE – INDIANA – U.S.A.

WPB Plumbing & Heating Committee Appointed

IN THE FIRST WEEK of September, T. Spencer Shore, Chief of the Division of Industry Advisory Committees, WPB, announced the appointment of 12 men to serve for the Plumbing & Heating Industry. Committee members are:

William M. Byrd, Jr., Vice Pres., Alabama Pipe Company, Chicago, Ill.; J. H. Collier, President, Crane Company, Chicago, Ill.; N. J. Higginbothan, Pres., W. A. Case & Sons Mfg. Co., Buffalo, N. Y.; Herbert V. Kohler, Pres., Kohler Company, Kohler, Wis.; W. Keith McAfee, Pres., Universal Sanitary Mfg. Co., New Castle, Pa.; L. R. Mendelson, President, Hotstream Heater Company, Cleveland, Ohio; Harold P. Mueller, Pres., L. J. Mueller Furnace Co., Milwaukee, Wis.; Henry M. Reed, Pres.; American Radiator & Standard Sanitary Corporation, Pittsburgh, Pa.; S. J. Reeves, Vice Pres., Reeves Steel & Mfg. Company, Dover, Ohio; E. C. Sammons, Vice Pres., Iron Fireman Mfg. Company, Portland, Ore.; Harold W. Sweatt, Pres., Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.; Reuben N. Trane, Pres., The Trane Company, La Crosse, Wis.

◈

Ray Oil Burner Company observed its 70th anniversary in September with a special issue of its house organ, "The Ray Reporter." The issue contained a history of the founding and development of the company and showed many of its early products.

Sinclair Oil Company's central district at Chicago issued its fueloil sales house organ, "The Sinclair Fire Box," for September as a War on Waste issue. Edited by "Chief" Bender, the text covers the more efficient production and utilization of heat, and how to conserve it. Detailed checking points are given for each operation.

Wheelco Instruments Company has appointed C. L. Clark, formerly with Westinghouse, as sales engineer at the Cleveland office; Robert N. Miller, formerly with Mercoid, as service engineer at Cleveland; and Howard B. Jones, formerly with McGraw-Hill, as sales and service engineer at Chicago.

(All weighed-in on the platform scale, another Mack-load of coal gets the go-ahead and rolls away. Sketched from life, near Scranton, by Peter Helck.)

Well-known American, at work!

THE SAYING "Built like a Mack Truck" is something more than a slang phrase. It is an acute observation on the difference between a Mack . . . and just a truck! It worked into the language because of the way a Mack works into a job. The first Mack, built in 1900, served 17 years. No one knows . . . *yet* . . . what records today's Macks will make. But you can put it down as sure that the first Mack, today's Mack, tomorrow's Mack . . . all set out to be the *best* trucks in the world when made!

Mack Trucks, Inc., New York, N. Y. Factories at Allentown, Pa.; New Brunswick, N. J.; Plainfield, N. J.; Factory branches and dealers in all principal cities for service and parts.

Mack

TRUCKS
FOR EVERY PURPOSE
ONE TON TO FORTY-FIVE TONS
BUY U. S. WAR BONDS

IF YOU'VE GOT A MACK, YOU'RE LUCKY . . . IF YOU PLAN TO GET ONE, YOU'RE WISE!

fuel oil & oil heat

G-E Publishes Fuel Saving Booklet

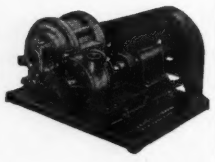
A NEW CONSUMER BOOKLET entitled "Tips on Fuel Conservation" has just been published by the air conditioning and commercial refrigeration department of the General Electric Company.

The booklet is written for all householders regardless of the type of heating equipment they have and should be of particular value in those parts of the country where fuel will be rationed or difficult to obtain. The fuel-savings facts are presented in three sections. The first concerns heat loss generally, covering weather stripping, storm sash, insulation, and other means of reducing heat loss. The second section deals with heating equipment and heating systems. Suggestions are offered for saving fuel in hand-fired and automatic coal-burning heating plants, in gas-fired and oil-fired automatic heating plants as well as in the steam, vapor, hot water or warm air heat distributing systems they serve. The third section deals with service calls and suggestions on how to avoid unnecessary calls. In this section, the importance of annual inspection and adjustment by a competent service man is heavily stressed.

WHY EXPERIMENT?

Kraissl Products Offer Proved Performance

Kraissl Class 60 heavy oil pumps



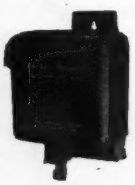
known and used as standard equipment for many years wherever independent pump and motor sets are required and as booster pumps for pump type burners.

Kraissl Class 72 Strainers and Filters

Single and duplex types for suction and discharge service. Any practical degree of filtration. A necessity on every fuel oil line to protect pumps and burner nozzles. Available for low pressures as well as high pressures up to 500 pounds hydrostatic test.

Kraissl-Trumbull #522 Fuel Pump Unit

for gravity type oil burners having a burning capacity of not more than 3 gallons per hour. A rugged, dependable, wall pump approved by Underwriter's Laboratories, Inc.



Write for literature and dealers prices.

THE KRAISSL COMPANY
INCORPORATED
295 WILLIAMS AVENUE
HACKENSACK, NEW JERSEY

Atlantic Conference Supports Ickes

MEMBERS OF THE ATLANTIC COAST Oil Associations Conference met at New York on September 9, adopting a resolution of confidence and support for giving the Office of the Petroleum Coordinator for War all authority over petroleum matters. Dr. John W. Frey, special assistant to Deputy Coordinator Ralph K. Davies, was a guest at the meeting.

Membership also was opened to a group of large primary and secondary suppliers who term themselves "Advisory Committee." Also admitted to membership was a group of primary suppliers to be called "Atlantic Coast Primary Suppliers."

Officials of the Conference explain that they favor Mr. Ickes over other men for control of the industry because Mr. Ickes is committed to a policy that preserves the position of the small, independent marketer. It is felt that without the care and sympathetic handling an experienced oil man could give it, rationing might tend to switch customers from independent distributing channels to the larger, integrated oil companies.

◈

The Harry Alter Co., New York, jobber of airconditioning supplies, has closed three branches in the Metropolitan area, those located in the Bronx, Jamaica and Newark, for the duration. New York area business will be handled from the main warehouse at 134 Lafayette St., New York.

Wayne Booklet Gives Oil-Saving Suggestions

WAYNE Oil Burner Company is distributing a booklet, "Victory Over Your Oil Heating Problems," covering ways and means of conserving oil. Copies imprinted with dealers' names are being supplied without cost for distribution to customers and prospects, according to C. G. Cleaver, general sales manager.

Subjects covered include firing rates, combustion chambers, the heating plant, draft regulation, registers and radiators, soot and scale removal, pipe insulation, baffles, storm sash and weatherstripping, heat and humidity control. Hints are also given the homeowner on things to check before calling for service.

An interesting table at the back of the booklet shows costs of useful heat per million Btu for oil, and manufactured and natural gas at varying efficiencies and costs per gallon and cubic foot.

◈

Johns-Manville recently dedicated a 1792-star service flag at ceremonies conducted by Lewis H. Brown, president. The company has 1623 employees with American armed forces, and 169 in Canadian service.

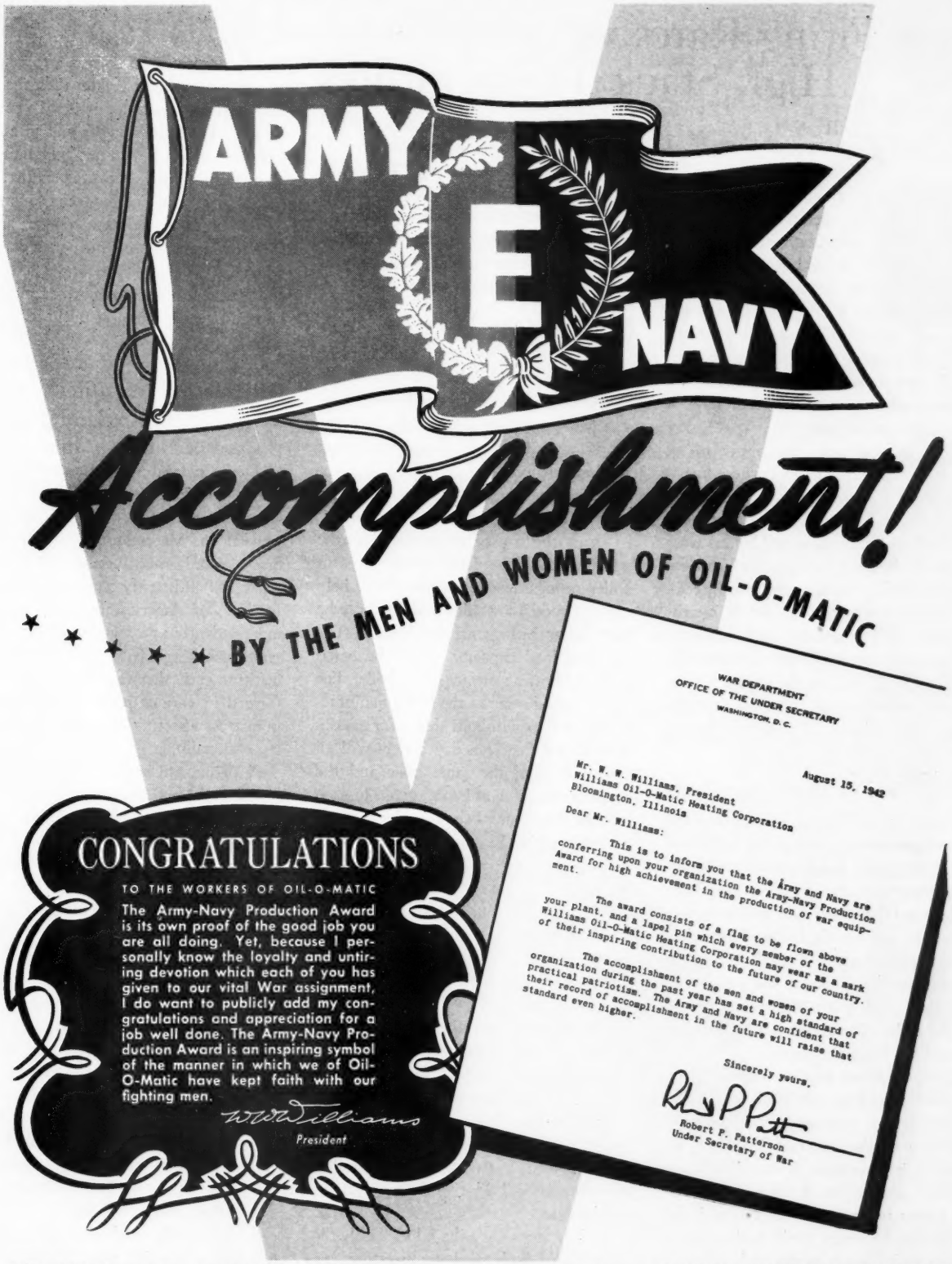
Fire Prevention Week was observed Oct. 4 to 10 by proclamation of President Roosevelt to "conserve our human and material resources from the destructive toll of fire."

Lau Blower Company has issued a new 12-page catalog on its single inlet blowers, both direct and belt driven, for air supply or exhaust. It includes performance data on three available series in a wide range of wheel diameters.

Kewanee Boiler Corporation has issued Catalog TW-95b on the Tabasco all-weld steel water heaters for solid fuels. Ten sizes vary in capacity from 130 to 700 gallons of water per hour with a 50° rise.

The Heiman Company, marketer of Konver-To-Kol conversion units, has appointed Smith-Benny Sales, New York, as eastern representatives.

Michael L. Lavorgna, city sales manager in Milwaukee for the L. J. Mueller Furnace Co. is to be vice-chairman of the 1943 Home Show.


ARMY
E
NAVY
Accomplishment!
BY THE MEN AND WOMEN OF OIL-O-MATIC
CONGRATULATIONS
TO THE WORKERS OF OIL-O-MATIC
The Army-Navy Production Award is its own proof of the good job you are all doing. Yet, because I personally know the loyalty and untiring devotion which each of you has given to our vital War assignment, I do want to publicly add my congratulations and appreciation for a job well done. The Army-Navy Production Award is an inspiring symbol of the manner in which we of Oil-O-Matic have kept faith with our fighting men.
W. W. Williams
President
WAR DEPARTMENT
OFFICE OF THE UNDER SECRETARY
WASHINGTON, D. C.
August 15, 1942
Mr. W. W. Williams, President
Williams Oil-O-Matic Heating Corporation
Bloomington, Illinois
Dear Mr. Williams:
This is to inform you that the Army and Navy are conferring upon your organization the Army-Navy Production Award for high achievement in the production of war equipment.
The award consists of a flag to be flown above your plant, and a lapel pin which every member of the Williams Oil-O-Matic Heating Corporation may wear as a mark of their inspiring contribution to the future of our country.
The accomplishment of the men and women of your organization during the past year has set a high standard of practical patriotism. The Army and Navy are confident that their record of accomplishment in the future will raise that standard even higher.
Sincerely yours,
Robert P. Patterson
Under Secretary of War

WILLIAMS OIL-O-MATIC HEATING CORPORATION · BLOOMINGTON, ILLINOIS

For more than 20 years manufacturers of precision-built oil heating equipment. For the duration — producers of precision-built War materiel — 24 hours a day, 7 days a week.

fuel oil & oil heat

Low Firing Rates vs. High Stack Temperatures

By
A. B. Wolle

INASMUCH AS IT IS NECESSARY to create economies in the operation of domestic oil burners to compensate for the restrictions on fuel oil, the old question of high stack temperature comes up again. As regards this point there have been some good suggestions made and some very bad ones. All of these suggestions have been based upon the theory that the high temperature of the waste gas represents a large preventable loss.

This problem does not apply to all boilers equipped with oil burners but it does apply most particularly to converted coal burning boilers. The reason that it applies here is that these coal boilers were originally designed for a greater mass flow of gases through them as required by coal. Mass flow means the volume or weight of products of combustion and excess air. With an oil burner and the more intimate mixing of oil and air the excess air required for combustion is greatly reduced, about 60% may be considered for an example.

Reduces Turbulence

Carrying the thought of a smaller volume of gas passing through the boiler and the boiler passes large enough to handle three times this amount, it can readily be understood that there will be less crowding of the gases in the boiler. This reduction in gas volume will result in less turbulence or disruption of the gas stream and consequently less absorption of heat by the boiler. The result is a higher than normal stack temperatures.

From the above it is obvious that a reduction in the firing rate under these conditions would only serve to reduce the efficiency of the boiler still further. To make an improvement it would be better to place obstruction in the centre of the gas passes to create turbulence and also to prevent the entry to the boiler of any air through leakage at the firebox.

There are other conditions that will produce similar results, as in the case of the too small boiler for the load connected to it. This condition is easily determined, for with a tight firebox and a good seal between the box and the boiler to control excess air, a high stack temperature will be accompanied with a good CO_2. The solution here is obvious; it is an increase in the amount of heat absorbing surface. To reduce the firing rate would only reduce the efficiency and no satisfactory, if any, oil saving would result.

Other Causes

Rather than arbitrarily reducing the firing rate of a boiler and taking the chance of making a bad condition worse, it is better to make a quick check of the conditions at hand and consider the stack temperature as the result of some inherent condition and correct the trouble at the source. The first thing to do of course is to check the size of the boiler with the standing radiation load. Under present boiler ratings this act is of very little help unless a good knowledge is at hand on the way boiler ratings are established. The standing load capacity should be based upon the heating surface of the boiler. For some reasons some of the boiler manufacturers like to withhold this information. It is hoped that someday boilers will all be rated upon the same basis and the square footage of radiation given in each case so that some of the troubles that beset the householder can be quickly cleared up by any service man with one book in his hand.

The next step is to build a tight firebox sized exactly to the standing radiation and not to the size of the boiler. It is desirable to have as small a firebox as possible so as to intimately mix the air and the oil for burning. The standard factors of 100 square inches of floor area for each gallon fired is right for high pressure burners, while 75 square inches can comfortably be used for low pressure burners.

Next seal the firebox to the boiler with hearth cement to stop air from getting in over the fire and diluting the products of combustion.

If these steps are adhered to closely the question of high stack temperature can mean only one thing. Not that the boiler is overfired but that the boiler is not large enough to absorb the heat at the rate it is liberated in accordance with the demands of the building. To reduce the firing rate then would only react in an increase in the quantity of oil used at no saving at the stack. Heat must be sent into a house at a rate equal to or greater than the rate that the heat leaves the house. To run on an undersized fire would result in a continuous use of oil without ever building up enough storage to secure comfort.

Last but not least is the question, "What is excessive stack temperature?" It is any temperature which exceeds 600° when the CO_2 is at 10%, and when these conditions are obtained under conditions of standard operation as outlined.

Oil Heating Institute of New England Formed

MEMBERS OF THE OIL HEATING industry in New England have organized the Oil Heating Institute of New England as a voluntary, non-profit association, incorporated under Massachusetts laws. It is the first regional group formed under the reorganized and newly named Oil Heating Institute of America, but will function independently as a regional group, at the same time cooperating with the national institute and other regional groups to be formed in various parts of the country, in matters affecting the oil heating industry nationally.

A permanent set of officers is yet to be elected, but the organization committee comprises J. Hendy Brody, chairman, Fred N. Beckwith, secretary, Don Edwards, Frank P. Scully and Charles B. Soper.

The Massachusetts Oil Heating Association will retain its identity as a separate organization dealing entirely with matters affecting the industry in Massachusetts, at the same time cooperating with other state and local associations of dealers when necessary, and its regular monthly meetings will be continued.

Classes of members in the New England Oil Heating Institute are: Dealer memberships, Class A, oil burner dealers and distributors not directly engaged in the sale of fuel oils; fuel oil dealers and distributors marketing up to 1,000,000 gallons annually; fuel oil dealers and distributors marketing over 1,000,000 gallons annually; associate members—composed of corporations, firms and individuals engaged in some allied or affiliated industry or business. Associate members are not entitled to vote or hold office.

LET'S KEEP THEM GOING!

A year ago Mercoid was enjoying with you a greatly increased business in the oil burner industry. That volume was a measure of the quickened stride of oil heating as a home utility. This year the outlook has changed, but there is oil heating in countless thousands of homes and, restricted though the use of oil may be, it is extremely likely that all fuels will encounter difficult problems. Oil heating simply has more of the stage at this time.

There will be this season, as in those past, the responsibility of looking after customers' needs—fuel, efficiency check-ups, repairs, replacements. Wherever this applies to Mercoid Controls, we are prepared to assist in every reasonable way, asking only that you keep in mind two things:

1. While an up-to-date control replacement might be the wisest course ordinarily, with current material shortages, repairs must be made and the material saved for other necessities.
2. Mercoid can best determine this, hence will welcome the return of *every* possible control to its repair department to the end that necessary repairs can be made with minimum use of new material.

The controls you formerly discarded, because they had been superseded by improved types, thus assume new value. If they are Mercoid and can be made to serve anew, it will be to our mutual advantage to keep them in service. A Mercoid control may be 10, 15, 20 years old, and yet with proper repairs, continue to function efficiently and indefinitely.

Remember—all we do today to keep those thousands of oil heated home owners convinced of our interest in them will earn not alone a fair money return, but a dividend of goodwill, a dividend on which you will pay no income tax.

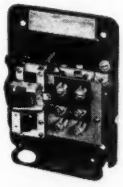
THE MERCOID CORPORATION • 4213 Belmont Ave. • Chicago, Ill.

THE ONLY 100% MERCURY SWITCH CONTROL LINE

The mercury switches used in all Mercoid Controls are dust, dirt and corrosion-proof, thus assuring positive performance under all operating conditions.

No. 855 THERMOSTAT

Line voltage thermostat employing a mercury switch. Handles motor load directly without a relay. Available for heating, refrigeration, air conditioning, etc.



TRANSFORMER-RELAY

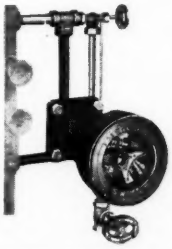
For use with coal blowers, unit heaters, stokers, oil burners, etc. A quiet and dependable mercury contact relay with low voltage thermostat or pilot circuit.

Temperature Control

For hot water heating systems. Prevents overheating. Equipped with outside adjustments. Also available with straight connection.

Type M-41 Furnace Control

A new compact limit control with outside adjustment. Type M-43 available for fan or blower applications.



Combination Pressure and Low Water Control

For boilers operating at high pressures. Protects steam boilers from low water conditions and excess pressure.

Combination Limit and Circulator Control

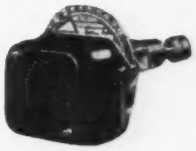
For hot water heating systems. Has separate adjustments for setting limit and circulator. There are many industrial uses for this control.

Day-Night Sensatherm

This thermostat saves fuel. A simple twist lowers temperature for the night and automatically goes back to daytime setting.

Type JM1 Safety & Ignition Control

Well known to the trade for its all-around dependable service. Guards against flame or ignition failure.

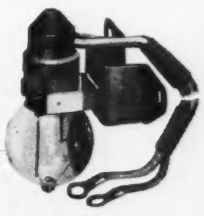


IMMERSATHERM

An efficient summer-winter domestic hot water supply control. Used with steam, vapor and hot water systems employing indirect hot water heaters.

PRESSURE CONTROL

This control has a record for its reliable service and long life. The outside double adjustment is a favorite with the trade. Available in many ranges.



VISAFLAME

A light actuated safety control system assuring full protection against flame, ignition or power failure. A great improvement in oil burner control performance.

Combination Fan and Limit Control

Combines two instruments in one. The limit side prevents furnace from overheating and the fan or blower side operates only when furnace is hot enough to deliver heat.

ODT Truck Control May Anticipate Delivery Pooling

THE GOVERNMENT, through the Office of Defense Transportation, will take control over virtually all commercial trucks on November 15, according to an order issued September 8 by ODT director Joseph B. Eastman. All trucks must be registered with an agency to be set up by ODT, they must carry at all times a certificate of necessity, without which they will be unable to buy gasoline, tires or parts. The reason for the control is conservation of equipment for war purposes.

For some time men in ODT have studied advantages and disadvantages of pooled deliveries among competitors to stop some of the overlapping, back-hauling and general trucking waste motion that stands out like a sore thumb in wartime. ODT executives have said that there is at present no intention to force pooling upon any industry, but they are well pleased when some group approaches them to help work out a voluntary plan.

The new order, however, contains a clause which gives ODT fullest control over every truck, and when civilian supply conditions become more acute, which they will as the war progresses, it would be feasible to rule out some overlapping trucks as "not of necessity." The clause states that ODT may cause any vehicle for which a certificate has been issued to be operated in such a manner, for such purposes and between such points as it shall direct, regardless of any contract, lease or other commitment, express or implied. Further, Eastman has stated that ". . . every mile of unnecessary travel must cease."

On October 1 a representative of ODT addressed New England fueloil men at Boston and pointed out to them the implications of the new truck control order, should it ever become necessary to invoke its provisions.

His principal suggestion, however, was that ODT would like to have dealers work out a voluntary cooperative plan that would effect at least a 25% reduction in overall tank truck mileage. ODT order No. 21, which stipulates a cut of that amount for all trucks includes tank trucks.

It is understood that the Office of Defense Transportation has tentative plans to hold meetings as soon as possible with fueloil men in all sections of the country. Voluntary truck saving plans will be asked for to be submitted to ODT, then to the Justice Dept. for legal O.K.

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Neptune Meter Assists Fuel Saving Program

AS A SUPPLEMENT to its Fueloil Merchandising Program, Neptune Meter Co., New York, has prepared for fueloil distributors a wartime good-will builder.

This supplement features suggestions for a timely publicity campaign, as contrasted with the more intensive sales promotion ideas contained in the merchandising plan itself. The good-will campaign is designed to foster loyalty and understanding in marketers' fueloil customers and to cushion such embarrassments as may be caused by any stringencies in fueloil supply and deliveries.

The feature of the plan is an Oil-Saving's folder, giving practical hints on oil conservation by the oilburning householder. This folder is shorn of servicing technicalities, and concentrates directly upon a simple oil-saving procedure which almost any householder could follow.

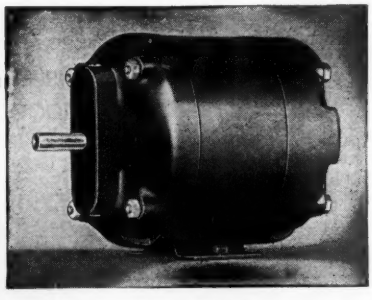
PETROFLO BUILDS GOODWILL WITH TIMELY MERCHANDISING PLAN

Chilled customers are not happy. You can help them keep warmer, save fuel and cut down burner-tip troubles by adding a few cents worth of Petroflo to each oil delivery. Less than a dollar's worth a year stops sludging, tip carburization, makes oil flow better and burn more efficiently. Write now for prices and details of free promotional material which will help you cure headaches caused by oil rationing.

SAVERITE ENGINEERING CO. • HOBOKEN, N. J.

PETROFLO SAVES OIL FOR WAR

A SMALL MOTOR



for General Purpose Applications

Types—Split Phase, Capacitor or Shaded Pole.
Speeds—1100, 1700, 3400 RPM.
Power—1/80 to 1/20 HP, depending on speed.
Voltages—Up to 220 A.C.
Frequencies—60, 50 and 25 cycles.
Bases—Solid, resilient or flange.
Mountings—Horizontal, Sidewall, Ceiling or Vertical, with shaft up or down.
Efficiency—High for such small powers.

What is your problem?

THE OHIO ELECTRIC MFG. CO.

5913 Maurice Ave., Cleveland, Ohio

OHIO MOTORS

BE SURE OF YOUR BOILER SPECIFICATIONS

USE THE AUTHORITY

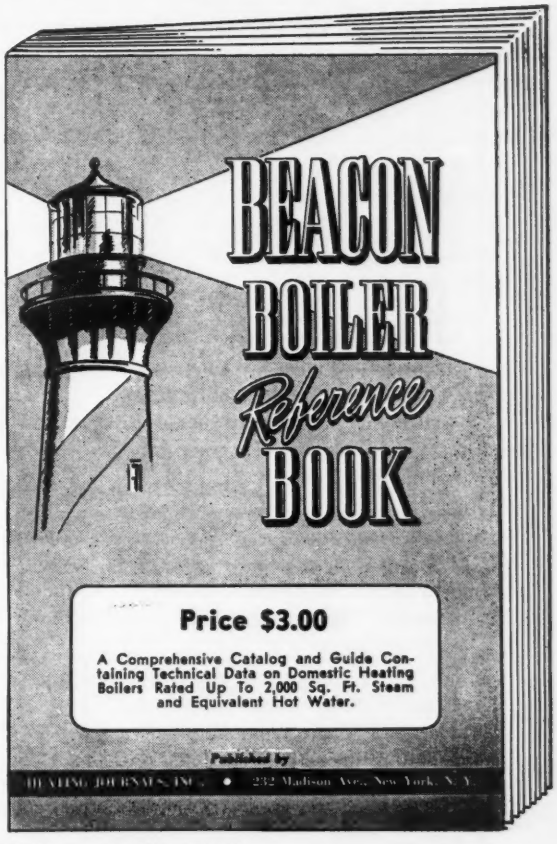
The BEACON BOILER REFERENCE BOOK contains 7116 listings of boilers and boiler-burner units up to 2000 sq. ft. steam and equivalent hot water,—new, old and obsolete—

Page Heading:

BOILER MANUFACTURER

Boiler Model No.	Rating		Minimum Firing Rate		Heating Surface	Firebox		Floor to Crown Sheet	Grate Size	Floor Area	Base Height (In.)	Chimney		Smoke Pipe Diam. (In.)
	Steam	Water	Lbs. Oil per hr.	Lbs. Coal per hr.	Sq. Ft.	Width	Length					Size (In.)	Height (Ft.)	

554 Pages. 1 1/4" Thick. 8 1/4" x 5 1/4" Overall.
Handy for Desk, Pocket or Brief Case.
Eliminates Your bulky Boiler Files.


BEACON
BOILER
Reference
BOOK
Price $3.00
A Comprehensive Catalog and Guide Containing Technical Data on Domestic Heating Boilers Rated Up To 2,000 Sq. Ft. Steam and Equivalent Hot Water.
Published by

COMPLETE RATINGS AND SPECIFICATIONS ON 195 MAKES . . 412 TRADE NAMES . . 7116 BOILERS FOR THE FIRST TIME IN A SINGLE VOLUME

You will find this volume a handy, useful working tool. Strongly bound; heavy paper cover; easy to use, because the names are in large bold type. This book will stand punishment and its accurate and complete contents will serve you well. It is necessary equipment for every well equipped dealer, jobber, contractor, salesman, service and installation man. **Remember,** if it saves one wasted trip *back* to the shop, or jobber, it's worth its cost!

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This book will earn its cost in a very short period because it will: SAVE TIME; SAVE PHONE CALLS; SAVE UNNECESSARY TRIPS and CONVERSATION. Everybody interested in or working with boilers, burners, stokers, or heating equipment should have this necessary reference. ORDER YOUR COPY TODAY!

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Also given in the listings are the trade names or numbers of the various series made by the manufacturers; in most cases of older boilers, the date of the catalog and whether it is obsolete; location or disposal of manufacturer; in many cases the source of parts. Shape of boiler and whether steel, cast iron, etc., is shown for practically all boilers, in addition to the data shown above.

ORDER YOUR COPY TODAY . . . PRICE $3.00 . . . C.O.D. $3.25

Other Interesting and Valuable Books & Reprints

1941-1942 SPECIFICATIONS BOOK OF OIL BURNERS AND FUELOIL
Gives specifications for 2200 models and makes of burners by 237 manufacturers. Gives grade of oil officially specified for each burner, method of atomization, air source, ignition data, oil feed, gph rating and motor size. **50c.** (Bulk purchase orders on request.)

PRACTICAL OIL BURNER SERVICE
64 pages of the best articles published in AIR CONDITIONING & OIL HEAT during recent years. Excellent if you want to increase your service business during the war. Many topics covered. How to balance steam systems, increase efficiency, test units, baffle boilers and furnaces, adjust burners, figure combustion chambers, calculate stack loss, etc. **$2.00.**

KNOWING THE A TO Z OF CO_2
This invaluable booklet shows you how you can test your customers' burners by modern methods obtaining a high CO_2 rating and a low stack temperature. **$1.00.**

SERVICE ON ALL MAKES OF OIL BURNERS
This book is essential in your repair and service work. Gives 10 detailed analyses of the most common basic service problems and shows you how to solve them efficiently. **50c.**

REDUCING FUEL OIL BILLS
This amazing booklet will help you show homeowners, in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit with the right kind of service. **50c.**

"Oil Burners," by Kalman Steiner, includes discussion of fundamental and advanced engineering and methods of oil-burner design, construction, installation, operation and maintenance. Covers the characteristics, specifications, combustion, handling, and applications of fueloil. **$4.50.**

"Herkimer Service Manual." Now you can buy this famous manual. It is a complete service and installation guide for oilburners, gas furnaces, and stokers written for the expert as well as the beginner. It is distinguished as the bases of the Herkimer Institute courses. **$4.00.**

Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or check be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.

FUELOIL & OIL HEAT 232 Madison Ave., New York, N. Y. Lex. 2-4566

L-56, Amendment 4

ISSUED SEPTEMBER 29, to become effective October 1, new provisions of L-56 are designed to tie fueloil marketing and delivery practices into fueloil rationing.

The amendment contains about 3,000 words and is too lengthy to reprint here in full, but any fueloil distributor may secure a copy from either local WPB offices or by writing Office of War Information, War Production Board, Washington.

Some of its more important provisions are:

(a) No one may sell or buy fueloil within the rationed area

1. for coal spraying purposes

2. for use in operating additional or converted facilities, unless, in the case of new construction, the additional facilities were specified in the construction contract and the foundations of the structure were completed before July 31, 1942; in the case of converted facilities, unless such conversion was completed prior to July 31, 1942; and unless, in case of either additional or converted facilities no other fuel is available or technical utilization factors prevent its use.

3. for use in oilburning equipment where standby facilities are available unless these standby facilities are already being operated to their maximum extent to effect the maximum reduction of fueloil requirements.

4. for space cooling.

5. for delivery from a point inside the rationed area to a point outside the rationed area unless coupons or coupon notes are received.

6. for operation of a passenger automobile anywhere in the U. S.

(b) Within the rationed area, on and after Ocober 1, no person other than a dealer or supplier shall transfer fueloil to a consumer.

(c) During the period October 1, 1942 to October 31, 1942, inc., no dealer or supplier may transfer fueloil to a consumer, and no consumer shall accept such transfer, except in exchange for coupon notes, coupons or other evidences, for an amount equal to the number of gallons transferred. These coupon notes or coupons apply not only to consumer purchases, but also the transfer of bulk stocks between the various marketing levels of the industry.

(d) Complete records must be kept by all dealers and suppliers of all transfers of fueloil showing dates, gallons, name and address of the party to whom transferred. These records must be kept for at least one year from the date of such delivery.

(e) Each dealer or supplier must give to the purchaser an invoice, delivery ticket or other document showing name and address of the buyer, the date and the number of gallons.

(f) All records, reports, coupon notes or other documents required, as well as the fueloil facilities of any person, are subject to inspection at any reasonable time by representatives of the War Production Board or the Office of Price Administration.

(g) The Director General for Operations or a representative of the Office of Petroleum Coordinator for War designated by him may examine and investigate the fueloil burning facilities owned or operated by any person, for the purpose of determining whether such equipment can be converted to the use of an alternate fuel. If facilities are convertible, and a supply of an alternate fuel is available, without any unreasonable hardship upon such person, then the Director General for Operations may, after notice sufficient to permit such conversion, forbid further deliveries of fueloil for use in such facilities.

Suggested October Fueloil Delivery Form

FUELOIL delivered after October 1 in the 30 rationed states is subject to surrender of coupons by the customer when the coupons are issued.

In the interest of service to the field, it is suggested that the form below be printed or typed by companies now delivering oil, and that each current delivery be made subject to the customer's signature on the form. It cannot be guaranteed that this form is entirely satisfactory, but it has been checked for its legality, and is believed to adequately serve to pledge homeowners to surrender the proper value of coupons when they become available.

AGREEMENT TO SURRENDER FUELOIL COUPONS

(To be used for deliveries on and after October 1, 1942, as provided in Limitation Order L-56.)

The undersigned hereby acknowledges receipt from ..... (Your Company)
of ..... **gallons of fueloil delivered on** ....., **1942, at** (Address)
.....

In consideration of the above delivery and pursuant to the provisions of Amendments Nos. 3 and 4 to Limitation Order L-56 issued by the Director General for Operations, War Production Board, the undersigned (Your Company) **agrees to surrender to** ..... **within fifteen (15) days after the effective date of any Fueloil Ration Order issued by the Office of Price Administration, coupons representing the amount of fueloil delivered as described above.**

.....
(Name of Purchaser)

.....
(Address)

By .....

.....
(Title)

Notice: Under the terms of Limitation Order L-56 it is required that (Your Company) ..... **report to the office of Price Administration the name and address of each person who fails to surrender coupons as required by that order and by the agreement set forth above.**

KEEP 'EM FIRING

with Gar Wood

★ Self-Contained Forced Warm Air Automatic Oil-Fired Heating Units. (from 50,000 to 500,000 B.T.U./Hr.)

★ Industrial Space Heaters up to 500,000 B.T.U./Hr.

★ Boiler-Burner Units up to 25 HP.

Some Distributors and Dealers are receiving Government business for Heating Equipment. If you are one of those who are called upon to submit estimates, heating plans and surveys, we suggest you enlist our cooperation and our engineering service.

Write today for "ENGINEERING STANDARDS"—this valuable 72-page book on Engineering, Installation and Operation of Heating Systems, sent free on request to Sheet Metal Contractors and Dealers, Engineers and Architects. This offer made for a limited time only. Address reply to Dept. 14A.

HEATING DIVISION

GAR WOOD INDUSTRIES, INC., DETROIT

Protect Freedom—Buy War Bonds

SMOKY FIRES? POOR CO_2?

--TRY MONARCH

Almost any Nozzles seem to give passable fires on some burner installations—but "passable" results are "out" for the duration! *How about* those jobs you aren't quite satisfied with? Are they pulsating on start-up, running, or shut-down? Do they have smoky fires? Combustion roar? Poor CO_2?

A Monarch F-80 nozzle with the correct spray characteristics, used in conjunction with the *proper air mixing equipment*, can *cure* most jobs of these troubles!

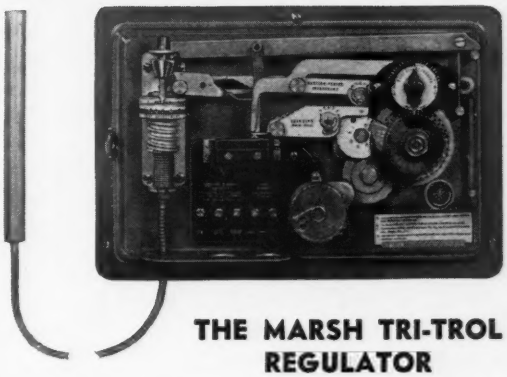
Tell Monarch all about some particular job, and ask for recommendations.

Write for Catalog D and Bulletin No. 11141.

MONARCH MFG. WORKS, INC.

E. WESTMORELAND AND SALMON STS. PHILADELPHIA, PA.

Your money making answer to FUEL RATIONING



THE MARSH TRI-TROL REGULATOR

IT answers today's big problem *right now*—pays you a profit comparable to that of a stoker or burner sale—and can be sold without any need for priority . . . that, in brief, is the story of the Marsh Tri-trol Regulator, one of the timeliest money-makers ever to hit the heating industry.

Authorities recognize that the only complete answer to Fuel Rationing must include precise, automatic control of the heating system. Most apartment, store, office, and similar multiple occupancy buildings do not have such control . . . they need it, *and are looking for it,* right now.

That's where the Marsh Tri-trol fills the bill, and introduces you to a rich new source of profit. It controls heating the only right way—starts the system each morning, keeps every room at a comfortable temperature during the day, shuts it off at night, all automatically, according to outside weather—permits the heating system to consume only as much fuel as is necessary. It is easily installed—fits any type of automatically-fired heating system—and *costs little, if any, more than the usual residential control.*

MARSH TRITROL COMPANY

600 S. Michigan Ave., Chicago ★ 347 Madison Ave., N. Y.

Could you ask for a sweeter set-up — *a vast new market, right price, no priority, a big profit? Right now*—before you forget—send back the coupon, and we'll rush mailing pieces to get you started.

COUPON BRINGS FACTS

Gentlemen: Send me all the details about the new Marsh Tri-trol Regulator. I can use _____ mailing pieces right now.

*Individual*_____

*Business*_____

*Address*_____

Questions, Answers Show How Washington Interprets Orders

EXPLANATIONS to clarify the meaning and the operation of WPB orders issued by the Plumbing and Heating Branch, have been issued by the branch in question-and-answer form. These are typical questions asked by homeowners and members of the trade that have been asked to get interpretations of the orders. The questions, and their answers, follow.

Homeowner Questions

Q. I have an oil burner type boiler which cannot be converted through the use of grates. Can I buy a new boiler that will burn coal, and have it installed?

A. No, a new boiler cannot be sold except to defense manufacturing plants and others having priority ratings (A-10 or better). Persons who have boilers that can't be converted should take steps to conserve fuel oil by insulation, etc.

Q. My oil burner is old, and very inefficient. Can I buy a new oil burner, and thus save oil?

A. No, the sale of new oil burners is restricted to rated orders. Furthermore, in many states, a WPB Order L-56, prohibits the sale of oil to new equipment.

Q. I have two heating boilers. One of these is fired with oil and the other, fired with coal, is used only in severe weather. Can get oil and continue to heat my building as I have in the past?

A. In most states, delivery of fuel oil is prohibited to anyone who has standby equipment unless that equipment is being used to its maximum capacity. This would mean that you would have to reverse your old procedure and use the coal fired boiler for as much of the season as you possibly could. In that case, you would be entitled to receive some oil to supplement your coal fired boiler in severe weather.

Q. What states are affected by L-56?

A. L-56 controls the sale of fuel oil in the following states—Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and the District of Columbia, and Washington and Oregon.

As announced, fuel oil is to be rationed in the following states for heating purposes—

Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, South Dakota, Vermont, Virginia, West Virginia, Wesconsin, and the District of Columbia.

Q. I have ordered a set of grates from my plumber, but he tells me that he cannot get them unless I file papers and get a priority rating. Do I need a priority rating?

A. No priority rating is needed to secure grates. A distributor, jobber, or wholesaler may purchase grates, stoker bars, fire doors, etc., for conversion without a priority rating. In turn, these may be sold to home and building owners, and to plumbing or oil dealers without any rating.

Q. I have a rating on a stoker application, but my supplier tells me that the manufacturer refuses to ship the stoker unless he gets a higher rating. What should I do?

A. The rating which you received gives you a place on the manufacturer's shipping schedule. It may be that you will have to wait some time for the equipment, but the manufacturer has to fill your order after filling other orders with higher ratings, provided he has the material to build it.

Q. I want to convert my oil burner, but my oil dealer tells me that I won't be able to get any coal either. Is this so?

A. We would advise you to get in touch with various coal dealers and see if you can get coal. We have been assured that coal will be available.

Q. Can I convert my oil burner to gas?

A. No. The sale of gas burning equipment is restricted by a WPB order (L-79, as amended) to rated orders.

Q. My oil burner is so installed that I get my domestic hot water supply from it. If I convert to coal, what can I do about this?

A. This matter should be taken up with your local heating contractor. It may be that by converting you will not get as much hot water. However, you will be assured of an adequate supply of heat, which is more important.

Q. I want to buy some fireplace grates, and burn coal in my fireplace. Can I get these?

A. If you can find someone who has this equipment, you may buy it.

Q. My heating man tells me that if I convert to coal, my boiler will not be large enough. Can I put in an extra section?

A. No, not without a preference rating. It should be realized, however, that the entire capacity of a boiler is used only during the most severe weather, and that most of the time, the boiler will be large enough.

Q. How can a conversion job be financed?

A. Conversion jobs have been removed from the credit-time restrictions of the Federal Reserve Board. Owners now can apply to a local bank and arrange to finance the cost of the conversion.

Trade Questions and Answers

Q. I am in the heating business and want to buy some grates, but my jobbing house will not sell them to me without a preference rating. What should I do?

A. The sale of grates is not restricted, and no rating is necessary. If you will let us have the name of your jobber, we will be glad to call him up and explain this to him.

Q. Can I use order P-84 to get grates for conversion?

A. No. You do not need any preference rating to buy these grates. P-84 is only to be used for replacement and repair purposes.

Q. I want to put a new boiler in to replace an oil burning type boiler that cannot be converted. They tell me I need a preference rating. Order L-79 says, "nothing in this order shall be construed to limit the sale or delivery of any equipment which is to be used for the purpose of converting oil burning equipment or gas burning equipment." Why, then, do I need a preference rating?

A. The provision quoted refers to grate

Recommended for NEW Refractory Economy

FOR BONDING
J-M Hellite is ideal for bonding firebrick with thin joints, wash-coating and patching old linings. Settings are strong and permanent. Comes ready-mixed, works easily, sets without heat.

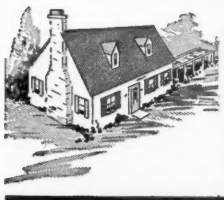
FOR POURED LININGS
J-M Firecrete handles as easily as ordinary concrete. Will not shrink, crack or disintegrate. Ideal for rotary-burner hearths, combustion chambers, etc.

FOR SEALING
J-M Fireite is an asbestos furnace cement that effectively seals clean-out doors, flue pipes and other furnace parts. Supplied ready-mixed, is easily worked and applied. Adheres tightly to castings, sheet metal or any other clean surface. Air sets without heat.

Write for New Edition of Booklet RC-8A

• Time-tested on thousands of jobs, these durable J-M Refractory Products provide maximum assurance of long life and freedom from maintenance. They are stocked by leading distributors throughout the United States . . . are easily obtainable on short notice. For the name and phone number of your nearest supplier, write Johns-Manville, 22 East 40th Street, New York, N.Y.

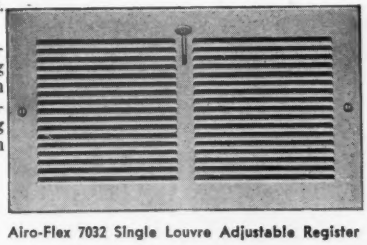
JOHNS-MANVILLE JM **REFRACTORIES FOR OIL BURNERS**



REGISTERS *for* SMALL HOMES *and* GROUP HOUSING

With the widespread use of simplified heating systems, often stripped to the bare essentials, small homes and housing projects need the added efficiency of Auer Registers. There are many Auer warm-air models suited to low-cost house requirements, such as the Airo-Flex "7000" Series shown here. This is a single louvre register with downward directional fins, bendable for other angles if desired. If you are equipping small home jobs, it will pay you to know about the Auer line.

Write for Auer Register Book showing all models for warm air and air conditioning. Separate Catalog "G" also available on flat metal grilles.

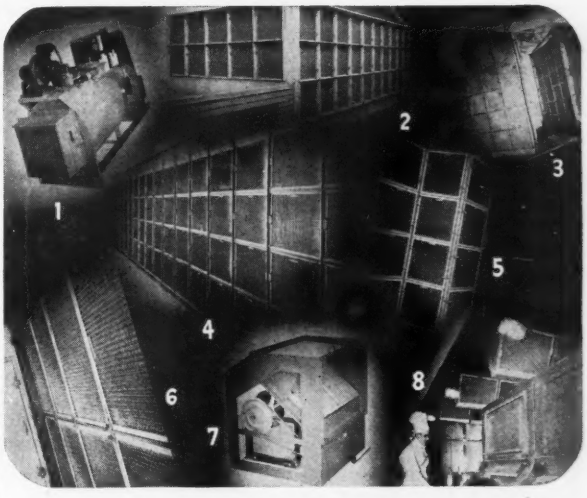


Airo-Flex 7032 Single Louvre Adjustable Register

The Auer Register Co.
Cleveland, Ohio

AUER REGISTERS
& GRILLES · For Air Conditioning *and* Gravity

AIR-MAZE
PERMANENT PANELS
For Every Air Filter Application
Industrial • Commercial • Institutional

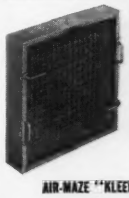


1. Well known industrial unit heater is AIR-MAZE equipped.
2. Typical AIR-MAZE installation in Detroit industrial plant.
3. AIR-MAZE installation in mid-western department store.
4. Large Cleveland bank building uses AIR-MAZE Air Filters.
5. Famous air conditioned Toledo cafeteria is AIR-MAZE equipped.
6. AIR-MAZE installation in one of New York's largest hotels.
7. Cut-away view of modern blower unit with AIR-MAZE filters.
8. AIR-MAZE Greastop filter installation in kitchen canopy of Detroit restaurant.

★ ★ ★

• The result of nearly twenty years of specialized engineering experience, AIR-MAZE Permanent Air Filter Panels embody every characteristic essential to the successful solution of air filtering problems in every field—industrial, commercial, institutional, and residential. Their long-range economy, high efficiency, large dust holding capacity, low pressure drop, and ease of cleaning have all been proved by scientific test as well as actual use. In the wide range of more than 3,000 types and sizes, there is an AIR-MAZE Filter Panel for every application to meet your particular requirements. Write for details.

TWO OF THE MANY AVAILABLE AIR-MAZE FILTER PANELS



AIR-MAZE "A" PANEL
A heavy duty type air filter of multiple graduated density for protecting Engines, Compressors, Blowers and Severe Service Air Conditioning Systems.

AIR-MAZE "KLEENFLO" PANEL
Provides the economical solution for lighter service air conditioning systems. Unit Air Conditioners, Room Coolers, Furnace Blower Cabinets and Window Ventilators.

AIR-MAZE CORPORATION
5220 Harvard Ave., Cleveland, Ohio

AIR-MAZE
DEPENDABLE AIR FILTERS FOR EVERY APPLICATION

fueloil & oil heat

To Dealers Who Want to Stay In Business During the War: ✓

Oil Burner Service Is One of Your Most Important Sources of Revenue. Do It Efficiently and Profitably!

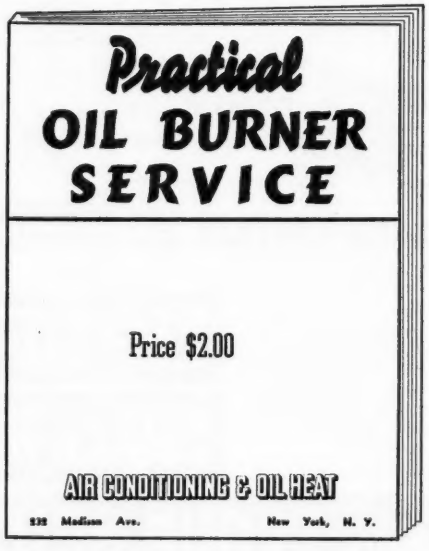
GET YOUR INFORMATION FROM MEN WHO KNOW THE SERVICE PROBLEMS AND HOW TO LICK THEM

Here is a volume which will help you a great deal. It is made up of the best articles on the subject that have been published in AIR CONDITIONING & OIL HEAT in recent years.

Single ideas, short-cuts and bits of advice in this book will be worth many times more than the purchase price, to you.

The subjects covered are:

- How to balance a steam system
- How and why of venting steam radiators
- Theory of oil combustion and CO_2
- How to get accuracy
- How to use an efficiency chart
- How to figure combustion chambers
- How to install for greatest efficiency
- How to baffle a boiler or furnace
- How to test an oil burner installation
- How to adjust a burner without instruments
- How to calculate stack loss
- How to determine the firing rate
- Effect of firing rate on cost
- How to service commercial burners
- How to deliver fuel oil automatically
- The meaning of draft
- How to check a burner
- How to survey a job for estimating and installing a burner



8½" x 11½". Printed on white, 70 lb. paper with black ink. Many drawings and illustrations. Heavy paper cover. Strongly bound. 64 pages and cover. A serviceable book.

Send your $2. today and get the benefit of the detailed, accurate and proved data in this book. It has been prepared by men who know the oil burner business and make their living in it.

(Fill out coupon; attach check or money order and send today)

Book Department
Heating Publishers, Inc.
232 Madison Ave.,
New York City.

Attached is $.....for which send me.....copies of your book PRACTICAL OIL BURNER SERVICE.

NAME .....

ADDRESS .....

.....

equipment, and similar items such as shaker bars, firing tools, etc. It does not apply to the various items defined as new metal heating equipment.

Q. I am a wholesaler. If I sell my grate stock without ratings, how am I going to replace it?

A. You may file a special form (PD-IX) showing what ratings you have on grate stock for replacement and repair and showing the balance as grate oil conversion sales.

Q. I want to put a stoker on a job to convert from oil to coal. The stoker manufacturer tells me that he needs a preference rating. I thought that stokers could be sold without preference ratings.

A. If a stoker has a capacity of less than 60 pounds per hour, a rating is not needed to get it. If over 60 pounds, the manufacturer has to have the rating of defense plants or others with high priority ratings to assemble it, and you will have to get your customer to file an application for a rating on a form (PD-1A).

Q. I ordered some stokers from a manufacturer and gave him preference ratings. He tells me that he cannot ship the stokers because he does not have a high enough rating to get the fans. What can I do to get a higher rating?

A. Give us the name of the stoker manufacturer, and we will get in touch with him about fans. Send data to Operations Section, Plumbing and Heating Branch, Railroad Retirement Building, Washington, D. C.

Q. I have lots of jobs signed up to put in grates for conversion purposes. I can get the grates, but I need some bolts, rivets, nuts, and pins to install it. What can I do about this?

A. File a special application (PD-1A), giving complete information relating to the planned conversion and send it to Operations Section, Plumbing and Heating Branch, War Production Board.

Q. I am a jobber and can't buy an adequate supply of grates to take care of what the demand will be this winter. What should I do?

A. You should file an appeal, addressed to the War Production Board, Washington, D. C. Show in the appeal that you need this equipment for anticipated conversion jobs.

Q. How about grates for fireplaces?

A. Portable grates for fireplaces can be sold without a preference rating. However, their manufacture was prohibited September 3, 1942.

Q. How about damper control equipment for heating boilers and furnaces?

A. The sale of these controls is unrestricted and there is available a considerable quantity.

◆

Shell Oil Company has appointed Ralph F. Carey, formerly sales manager of the New York-New Jersey division, to acting division manager, succeeding Harry J. Underwood, who has been transferred to manage the Boston Division, according to P. E. Larkin, vice-president, marketing.

Carrier Corporation has named Miss Helen G. Curran to the personnel staff. Miss Curran formerly was connected with the New York Hospital and R. H. Macy & Co. Ralph Ebbert is director of Carrier's Personnel Department.

Emergency Service Company has been formed at New York by Richard Barnett to act as consultants in oil-to-coal conversions.

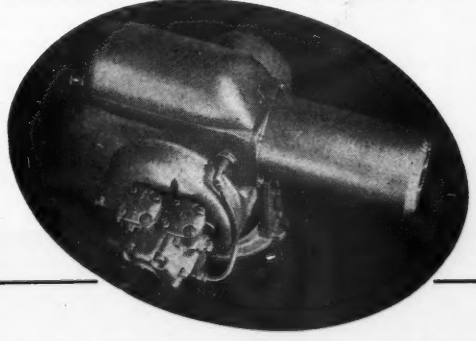
HERCO
The Oil-Thrifty
OIL BURNER

Engineered to Build Good Will!

Oil savings . . . dependable performance . . . heating satisfaction . . . are engineered into each Herco Oil Burner. These are the advantages that give satisfaction . . . build lasting good will. Sell Herco . . . the burner that "engineers" future sales!

At present, war materials demand 100% of Herco's production. *But a limited number of Herco burners are available for immediate delivery.*

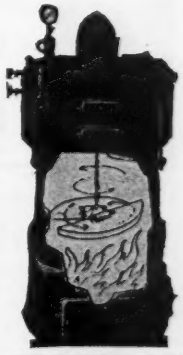
All Herco burners are listed as approved by Underwriters' Laboratories, Inc., for Commercial Standard CS75-39.



HERCO OIL BURNER CORP., LANCASTER, PA.

SAVE OIL for NATIONAL DEFENSE

THE HARVEY HEAT HOLDER



This special refractory disc, made in two adjustable halves, gives to the hot gases a rotary scrubbing action which boosts combustion efficiency and speeds up the heating while saving valuable oil.

Priced to resell at $10.00
Dealer's net Price.
Complete with clamps and chain 3.75
YOUR PROFIT $6.25

GIVES EXTRA HEAT

(available with special door bracket for square boilers $4.75 net)
DEALERS ENVELOPE STUFFERS FREE

SID HARVEY, INC.
VALLEY STREAM, N. Y.

Fuel oil & oil heat

Delivery Costs Up

(Continued from page 28)

degree days; period No. 3 is Jan. with 1,200 degree days; period No. 4 is Feb., with 1,140 degree days; period No. 5 is March, April and May, with 1,560 degree days. Let's also imagine that borrowing of coupons during a present period is limited to 13% of the coupons of the following period. Our customer, Mr. Jones, has given us coupons for 1,240 gallons (the ration board deducted 260 gallons worth of coupons from his rationed 1,500 because Jones' tank inventory was 260 gallons on Sept. 30th). The coupons are numbered to coincide with the 5 ration periods. Mr. Jones has left coupons for 25 gallons in Period 1.

It is also assumed that the coupons to be used in each period are based upon the coupon holder's heat requirements during each period as judged by the normal degree days expected in each period. Therefore Mr. Jones has No. 2 coupons for 240 gal., No. 3 coupons for 300 gal., No. 4 coupons for 285 gallons, No. 5 coupons for 390 gallons.*

That seems to be all right for a basic pattern as far as rationed oil *consumption* is concerned. To allow for weather variations on Degree Days, the ration plan also has a one week "slop over" cushion at the end and beginning of each period. This would allow Mr. Jones, if he had some number 1 coupons left over at the beginning of Period No. 2, to use them. Also if Mr. Jones found himself running short of oil at the end of Period No. 1 he could borrow some coupons from Period No. 2 to use during Period No. 1. Here we get to the meat of this article!

How many coupons can Mr. Jones borrow from Period No. 2 to use in Period No. 1? We understand at this time that it will be about 13%. He can not do this borrowing, however, until the last week of Period No. 1.

In other words, Mr. Jones, during the last week of any period, can not have put into his tank more oil than he has present period coupons remaining, plus 13% of the coupons for the following period.

That set-up may help Mr. Jones out of a tough spot as an oil consumer.

Just consider what it does to a well run Degree Day delivery system, though.

For example, Mr. Jones' tank full as of September 30th is going to carry him along, at his rate of use, until approximately November 24th. At that time 800 Degree Days will normally have passed and Mr. Jones will be down to the Degree Day safety reserve of 60 gallons. The oil dealer would normally deliver at this time 200 gallons or more to fill the tank.

The dealer in this case must make a far different delivery. Jones has 25 gallons coming to him on Period No. 1. If 13% is borrowed from Period No. 2 that will be an additional 31 gallons that Mr. Jones can have put into his tank or—a total drop of only 56 gallons!

To be sure, the dealer, right after the first of the month, can fill the tank. But he doesn't dare let his customer go that long. Between November 24th and the first of the following month, the tank could easily run dry necessitating a special trip. Besides which a properly run Degree Day system is based on a certain rhythm of delivery that, once thrown off, can be disastrous.

Now you might say here that Mr.

*Ed. Note: *Mr. Goddard's story was written before the announcement from OPA that coupon periods would be for equal degree day divisions. This does not, however, affect the overall implications of the story.*

BECAUSE NOTHING TAKES THE SHOCK LIKE RUBBER

GUARDIAN DIRECT DRIVE COUPLINGS

PROLONG LIFE— ADD TO EFFICIENCY

Exclusive rubber cushion made with oil-resisting treatment and gripped permanently by die-cast ends combines positive drive with resilient protection against misalignment and free end float. No parts to get out of order, become noisy, need replacement, or lubrication. No backlash.

Custom made in various degrees of flexibility engineered to job. Lengths from 2½" up. Bores 5/16", 3/8", 7/16", and ½". More than 750,000 in service.

Write or wire today for testing sample and complete information.

GUARDIAN FLEXIBLE COUPLINGS

213 E. MICHIGAN ST. MICHIGAN CITY, IND.

NO SHORTAGE ON SERVICE!

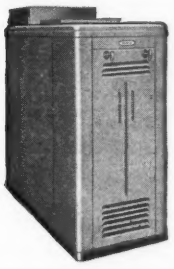
There is no shortage on Tuthill service to keep your pumps and Fuelstats operating at peak efficiency. Under Tuthill's war-time service plan you can count on prompt, economical pump repairs or re-conditioning through our authorized service stations or at the factory. This is your safeguard for dependable pump performance.

Write for full details

TUTHILL PUMP COMPANY

939 E. 95th St., CHICAGO, ILL.

MONCRIEF-
Today and Tomorrow



• Our business is building oil-fired winter air conditioners and pipe and fittings; but our job now is to help win the war, and to that end our facilities are directed. When Victory is won, progressive dealers can look confidently to Moncrief for units that will embody all that is best in efficiency, style and value.

THE HENRY FURNACE & FOUNDRY CO.
3483 East 49th St. • Cleveland, Ohio

MONCRIEF FURNACES
WINTER AIR CONDITIONERS
★ PIPE AND FITTINGS ★

IF IT CAN BE REBUILT . . . SID HARVEY'S CAN DO IT!

SID HARVEY'S has the largest and best equipped plant devoted exclusively to the rebuilding of oil burner pumps, controls, motors, valves, etc., which enables you to make money and keep customers satisfied in these serious times.

Pumps reconditioned by SID HARVEY'S are guaranteed to look and work like new, and the same goes for controls, motors, and everything that we recondition. . . . And remember if it's a special unit that can't be repaired we have the adapter that will enable you to replace it with a standard part.

Save time, call-backs, and gasoline—send us your troubles or write for complete details on SID HARVEY'S Reconditioning Service, Repair Kits and Catalog of Specially Priced Services.

SID HARVEY, INC.
VALLEY STREAM, N. Y.

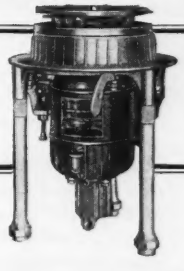
ABC Oil Burner

IS EQUAL TO THE TEST THIS WINTER

ABC Oil Burners — built for over two decades for low fuel consumption and trouble-free efficiency — are more than equal to the test this Winter. Whether installed recently or as far back as the '20s, ABC Oil Burners will earn the sincere appreciation of American homeowners for many years to come. And those Dealers who have identified themselves with ABC will be the men to whom the homeowners will look in the inevitable progress that will come in the postwar world — the world for which ABC is preparing itself with new engineering research and rich experience.

AUTOMATIC BURNER CORPORATION
Chicago, Ill. New York, N. Y.

THE TORIDHEET LIBERTY LINE



. . . You Can Be Mighty Proud You're Installing It

Because, when you install Toridheet you know you're installing oil heating at its best . . . because Toridheet has features which really mean something in obtaining highest combustion efficiency . . . because Toridheet was created to *cut* fuel consumption—and *that's* important under severe wartime restrictions . . . and, finally, because quick shipment can be made from stocks of rotary wall-flame burners, pressure burners, air conditioning units and water heaters and from warehouse stocks of oil-burner boilers.

This is the time to tie up with Toridheet. A post card will bring complete information.

CLEVELAND STEEL PRODUCTS CORP.
TORIDHEET DIVISION CLEVELAND, OHIO
Oil Burners ★ Air Conditioning Units ★ Oil-Burner Boilers
Coal and Gas Furnaces ★ Water Heaters

Jones is burning his oil according to Hoyle. His 60 gallons will maybe take him through to Dec. 1st so he actually is *not* borrowing oil from his number 2 Period to be *burned* in number 1 Period. That's true! But Mr. Jones is controlled by coupons. He is specifically charged that he shall not use, in Period No. 1, more than 13% of the Period No. 2 coupons. What is he going to do? What is his oil dealer going to do?

We have a graph drawn out over the entire season for Mr. Jones. It shows how using a Degree Day delivery on him, subject to rationing on the basis outlined, would result in the following deliveries—260 gal. on Sept. 30th, 56 gal. on Nov. 24th, 200 gal. on Dec. 6th, 48 gal. on Dec. 30th, 200 gal. on Jan. 5th, 98 gal. on Jan. 24th, 200 gal. on Feb. 6th, 98 gal. on Feb. 23rd, 200 gal. on Mar. 7th, 139 gal. on April 10th.

Three Extra Deliveries

That's ten deliveries! Three more than the seven we thought necessary. The dealer might have safely held over the Dec. 30th delivery and brought it down to nine deliveries. But you get the picture? The tragedy of Mr. Jones and the dealer's sincerity and pleasure at the thought of saving delivery effort being turned into woe and disillusionment by a technicality!

Multiply Mr. Jones by several hundred thousand and you'll have some idea of the waste in time, tires and trucks that may ensue *unless*—provision is made in rationing so that in the last week of a period Mr. Jones may borrow enough coupons from the following period to allow his tank to be filled to the proper level.

We hope that, by the time you read this, news releases on which we are basing our assumptions, will have been proved incorrect.

We sincerely hope that all consideration will be given to the fact that again—a fuel oil consumer, accepting a normally timed delivery, must be allowed, during the end "slop over" space of any given rationing period, to borrow coupons from the following period in whatever amount may be necessary to fill his tank. Furthermore any "slop-over" time at the end of a period must be sufficiently long so that it will not penalize the size of deliveries which may be made previous to the beginning of the "slop-over" time.

Otherwise the efficient delivery systems of all fuel oil dealers, or the delivery system of any cooperative effort, will be so penalized that attempted conservation of tires, trucks and drivers will be futile.

The boss? Oh, yes, we started out by saying some one has to be boss. And you say we haven't proved anything yet? Well—if the situation we outline is correct there is a boss and its name is Technicality! A poor thing to stand in the way of honest effort!

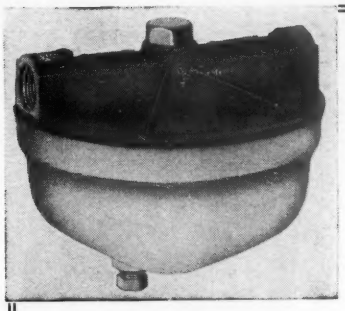
◈

Torrington Celebrates

TORRINGTON Mfg. Co., Torrington, Conn., held its annual clam bake and field day for 400 employees on September 12. Besides mountains of food and plenty of exercise, employees were presented with the Torrington City Minute Man flag for their war production and their bond subscriptions. Mayor Patten made the presentation for the city, and Henry Ellis, president, and Alexis Doster, secretary and treasurer accepted the award for the employees and for the corporation.

COAL
COAL
I CAN FREE UP TO ONE-FOURTH OF THESE CARS FOR WAR TRAFFIC!
FIELD
"SCOTTY FIELD"
DEALERS: Field Controls Cut Fuel Consumption Up to 25% . . . — Help Uncle Sam . . . — Give You Something More Profitable to Sell
Write or Wire today for complete information on how the FIELD CONTROL line can UP your sales volume considerably
--COMPLETE COVERAGE--
Illustrating Field Type M — one of a complete line covering every heating installation in your community. Easily sold; no servicing.
FIELD CONTROL DIVISION
MENDOTA, ILLINOIS

double play...
● Quiet MAY performs a "double-play" to help retire the Axis! ● From the MAY Plant, day after day, flow vital war materials. And in thousands of U. S. homes, MAY oil burners are on the job for conservation . . . s-t-r-e-t-c-t-h-i-n-g every drop of precious fuel. In both cases, it's efficiency at work...the kind for which the name of MAY is famous. May Oil Burner Corp., Baltimore, Md.
QUIET MAY
OIL BURNERS
"SUPPLIERS TO UNCLE SAM"



WRITE FOR LITERATURE

ATTACK THE "FILTH COLUMN"

Use GENERAL FILTERS to keep all dirt, sticky gums and waxes from fouling nozzles. SAVE TIME; ELIMINATE SERVICE TROUBLES DUE TO DIRTY NOZZLES; REDUCE YOUR SERVICE COSTS.

In War Time You Must Be Sure of Your Filters!

- - - Two Models - - -

Model 2A300 for Power Oil Burners

Model 1A50 for Space Heaters and Water Heaters

Excellent design; fine workmanship. A good record of service to the field. Dependable.

GENERAL FILTERS, INC., 8699 W. Chicago Blvd., Detroit, Mich.

Fueloil Rationing

(Continued from page 16)

lons for the one unit coupon, and one hundred gallons for the ten unit coupon. Definite value coupons of one, five, twenty-five and one hundred gallon size are used for certain purposes other than space heating. For inventory purposes dealers will use special definite value coupons in one and one hundred gallon size. Coupons are printed on safety paper to prevent counterfeiting, and are assembled in sheet form—100 coupons to the sheet.

Basic Ration for Private Homes

Three factors determine the basic home fuel oil ration: (1) a standard *heat-loss formula* based on the square foot dwelling area to be heated; (2) the *previous heating season's consumption* reduced by the required percentage; (3) the *number of occupants* in each house. The ration will be adjusted to the normal temperature in the area by the use of a degree day temperature table for each zone. The U. S. Weather Bureau has supplied the degree day information for our use.

The heat-loss formula considers the heating requirements of a typical free-standing house possessing standard insulation and burner efficiency under the normal degree-day temperature of the area in which it is located. The formula is set to achieve a standard room temperature of about 65°—the level necessary to meet the fuel oil shortage. This temperature is within the limit of minimum health standards.

The basic application blanks will contain the information necessary for the local board to determine the home ration. Consumers will have an opportunity to fill their tanks before the program starts so the board will assume that each house has 275 gallons in its tank at the outset. If tank capacity is less than 275 gallons, coupons will be allowed to complete this inventory. The board will tailor each ration from a standard coupon sheet.

Ration Periods

The heating season has been divided into five periods of approximately equal degree days. Since the calendar distribution of degree days differs regionally, the dates of these heating periods will be different for each thermal zone. Coupons are numbered to indicate the period over which they are valid. The value of the coupons, of course, can be changed from period to period to meet unusual weather conditions and uncertain factors of supply.

Ration sheets will be "tailored" by periods to the approved gallonage requirements of the consumer.

Thermal Zones

In order to care for regional disparities for heating requirements the rationed area is divided into four thermal zones (A, B, C, and D from North to South). Coupons for each thermal zone are colored differently. Thus different values may be assigned to the coupons of different zones in order to account for regional differences in the unusualness of the weather and to equalize the reduction in internal temperature which results from any given percentage cut in the gallonage value of the coupons.

The basic ration may be adjusted to take account of abnormal changes in weather and supply by variation of the

DONGAN TRANSFORMERS

FOR DEPENDABILITY

DONGAN ELECTRIC MFG CO.

2981-2991 Franklin St., Detroit, Mich.

"The Dongan Line Since 1909"

OIL SOOT **E-Z** DESTROYER

WAR ON FUEL OIL WASTE

Simply spray E-Z, and the soot in fire chamber and flues vanishes instantly. Increases efficiency of oil. One trial will convince you. "EASY" TO USE . . . ECONOMICAL TOO! Makes satisfied customers.

DISTRIBUTORS: Write for fine proposition.

HEALY-RUFF COMPANY, 797 Hampden Ave., St. Paul, Minn.
Enclosed find check ( ) money order ( ). Send the following prepaid:

No. 1 pkg. ....$1.00 Name .....
No. 5 pkg. .... 4.50 Address .....
Spray Gun .... .75 City ..... State.....

WITHOUT DRAINING OR FLUSHING BOILERS!

FUEL SAVINGS 5% - 20%

Use RUSTBUSTER. It cleans boilers and boiler water WITHOUT DRAINING . . . WITHOUT FLUSHING . . . WITHOUT LABOR . . . simply poured in through any convenient opening . . . and left in.

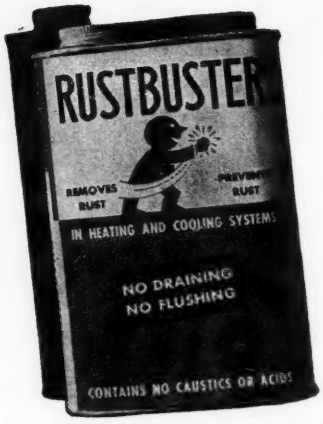
RUSTBUSTER prevents corrosion for an entire heating season.

RUSTBUSTER permits boilers to operate at their highest efficiency. What good is a high CO_2 if the boiler is full of scale?

Write us or see your jobber for RUSTBUSTER. Helps your customer; helps you; helps your PROFITS.

CANNON CHEMICAL CO., Everett, Mass.

New boilers, those very dirty or troublesome, should be cleaned and scoured with OIL BUSTER, then treated with RUSTBUSTER to keep them clean.



gallonage value of the coupon. However, in order that the unit value may reflect actual rather than anticipated weather conditions, adjustment will take place in the following period. The degree day history of Period 1, for example, will be reflected in the value of the coupons of Period 2. To compensate for this *ex post facto* adjustment, advanced and delayed use of the coupons of each period will be permitted. For example, coupons for Period 2 may become valid the last week of Period 1 and may remain valid until the second week of Period 3. This extension will enable consumers to secure extra fuel oil during unusually cold weather before the next regular coupon period. It will also permit more efficient delivery quantities.

The basic ration for commercial, industrial, and institutional establishments will be determined by a percentage of last heating season's consumption adjusted to normal seasonal requirements. When such information is not available, a certificate by an architect or heating engineer as to the normal fuel requirements will be required. A standard percentage cut will be applied to the requirement set forth in this certification. All types will receive a uniform percentage cut which will in general exceed that applied to domestic users. Exceptions will be made for hospitals where a severe cut might present a serious health hazard.

Supplemental Rations

Supplemental rations may be granted by the boards upon demonstration that special hardship would result from the basic ration. The following types of hardship cases may be thus cared for:

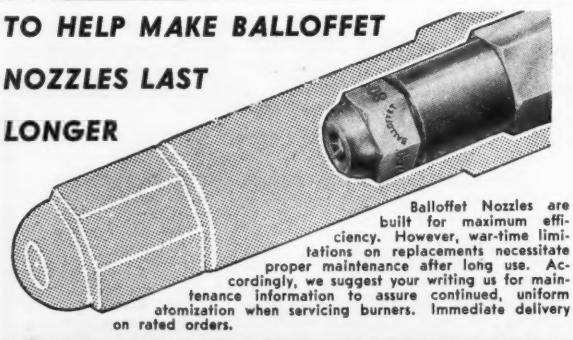
1. Persons of poor health, those of tender or advanced age who require warmer temperatures may receive supplements:
   a. *Children:* The presence of children under 4 years of age justifies rations to heat the house slightly above the assumed norm.
   b. *Sickness and old age:* Eligibility for supplemental rations will be determined by prescription of a licensed physician in the case of sick people and elderly people.
2. Restitution may be made for tank leakage upon proper certification by a technical expert.
3. Persons injured by mistakes of the ration board or the supplier may receive adjustments.
4. Persons living in inaccessible areas may use coupons of more than one ration period by special permission from the ration board. Such purchaser assumes the risk of subsequent revaluation of coupons.
5. Persons who can prove physical or financial inability to bring the dwelling or burner up to full efficiency, and the impossibility of making adjustments such as closing off rooms. Supplemental rations will be denied if conversion to coal is possible. Application requires certification by responsible housing authorities.

Excepting class No. 1, Boards may deny any of these supplementals at will.

Water Heating

Fuel oil for heating water for domestic use will be curtailed in the same proportion as for space heating. The water heating ration will be added to the basic ration

TO HELP MAKE BALLOFFET NOZZLES LAST LONGER



Balloffet Nozzles are built for maximum efficiency. However, war-time limitations on replacements necessitate proper maintenance after long use. Accordingly, we suggest your writing us for maintenance information to assure continued, uniform atomization when servicing burners. Immediate delivery on rated orders.

BALLOFFET DIES AND NOZZLE CO., INC.
6825 ADAMS STREET GUTTENBERG N J

AUTHORIZED PUMP SERVICE
Repairing Replacing
TUTHILL PUMPS
Sundstrand—Viking—Webster Pumps
Motors—Transformers—Controls
Parts for all Types of Burners
METRO SUPPLY COMPANY
15 HENDERSON STREET EVERETT, MASS.
Phone { Day: Everett 2661 / Night: Malden 2661

and will be based on fifteen gallons plus five gallons per person per month.

Commercial and industrial users of oil for heating water receive the same percentage cut under normal requirements that is applied to space-heating requirements. Supplemental rations may be granted to establishments where hot water is essential for health requirements.

Other Uses for Oil

Oil for lighting, cooking, and other non-heating uses will be controlled but not curtailed. Allotments will be based on past consumption and estimated requirements. Military and industrial non-heating uses will be uncurtailed and will be accounted for by acknowledgment recepits rather than coupons.

Delivery

It is permissible for the customer to deposit his coupon sheet with his dealer. The rationing plan, therefore, need not interferene with the dealer's delivery practices. It will be possible for dealers to continue their efforts to arrange for delivery in such a manner as to conserve gasoline and tires.

All purchases must be made by coupon or authorized acknowledgment. Dealers will replenish their stocks only in return for coupons which they hand up to their suppliers. Dealers are licensed at the start of the rationing program. They are given "inventory coupons" to the extent of their unfilled capacities. Instantaneous audit is therefore possible, since coupons plus stock must equal capacity at all times.

Registered primary suppliers will submit to the Office of Price Administration monthly reconciliation reports showing opening and closing inventories and other pertinent data.

The essence of rationing is fair sharing of the limited supply to the best interests of the war effort. Inasmuch as fuel oil rationing is fraught with the most serious potential hazards to all consumers of any rationing plan developed so far, special care has been taken to block all possibilities of abuse. But the success of any such plan still depends greatly upon wholehearted cooperation by all patriotic citizens.

N. Y. Power Show Moved To Madison Sq. Garden

ANNOUNCEMENT has been made that the 15th Exposition of Power and Mechanical Engineering, which was scheduled to be held in Grand Central Palace, New York, November 30 to December 5, will be transferred to Madison Square Garden. It will be staged during the period November 30 to December 4—five days instead of six.

The change is due to the fact that the U. S. Army has taken over the four exposition floors of the Palace to be used as an induction center for the duration. More than 150 exhibitors have taken space in the Power Show, and these will find ample room in Madison Square Garden. Space and arrangement of exhibits will be on a basis similar to the original plan. The exhibitors' list undoubtedly will be augmented considerably before the opening date.

The power show is held biennially under the managership of Charles F. Roth, 480 Lexington Ave., New York.

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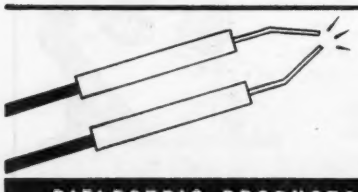

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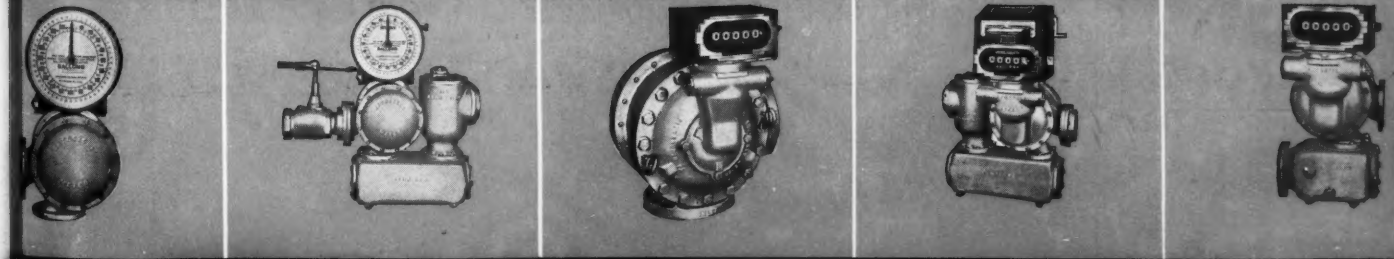

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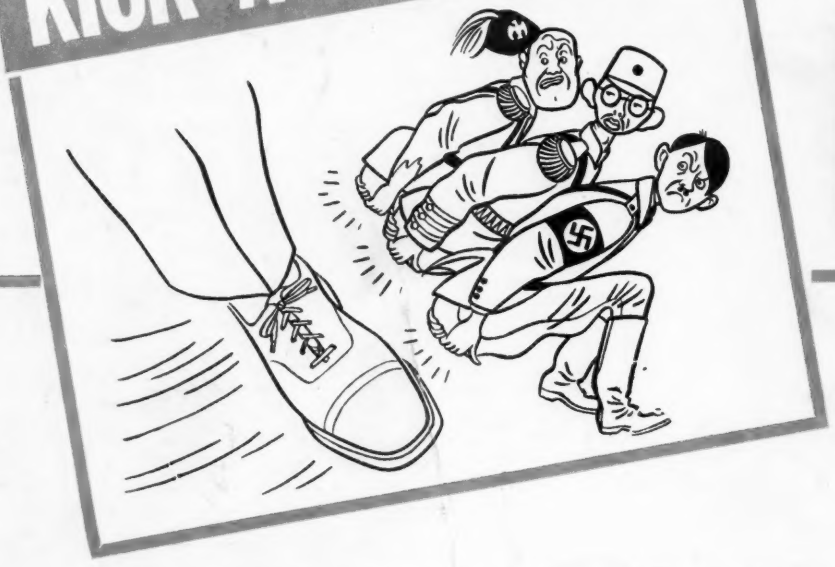

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"Hope my trucks and tires stand up! When I think of the beating some of 'em have taken! Holy cats, I've got to do something about tires for that number 3 unit right now.

"Kind of tough to see my business getting kicked around but there's not much to do about it. Wish I'd listened to that truck salesman a year ago.

"What's the diff! When stuff gets worn out, I'll probably be worn out too.

"I suppose I'll be kissing my customers good-bye after the years it has taken me to build up this business.

"Oh, the - - - - with it! I don't care whether school keeps or not."

OR ARE YOU *THIS* MAN!

"Yep! There IS a War.

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